

LIBRARY

. OF .

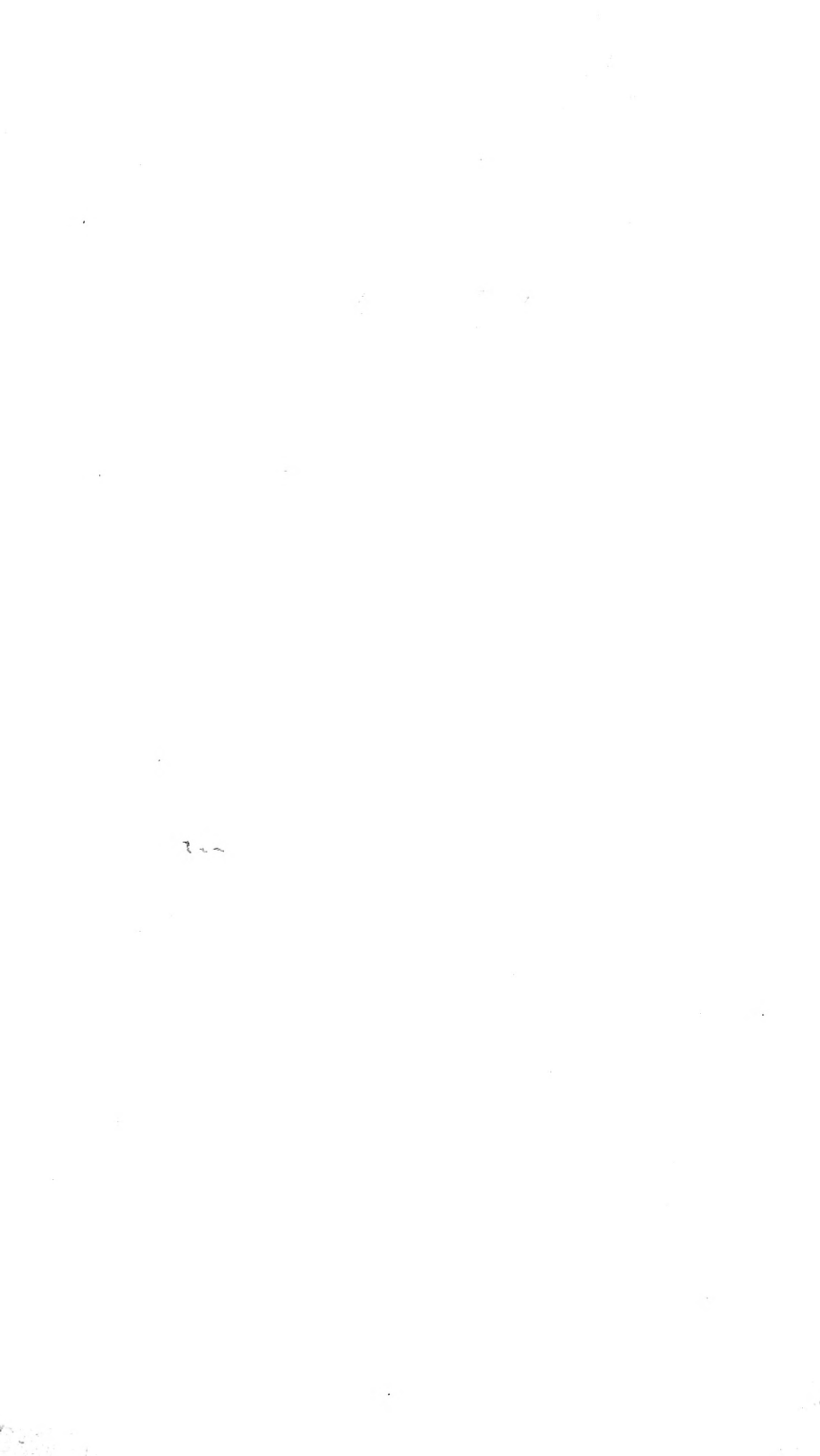
Pittsburg Academy of Medicine.

DONATED BY

Dr. J. M. Hall

NO.

730







Enlargement of the ovary treatment of
see page 32 -

Groundnut decoction of page 34 -
Enlargement of the ovary -

Discourage the secretion of milk
Cover the mamma with the following
preparation - viz one ounce of
unbleached bus-man - 2 1/2 oz of fine
olive oil - and two drachms of honey,
muted together. page 11-second part.

After delivery when the ^{lets} continue,
general, or local bleeding to be continued.

After passing large clots of coagulum
Vor ~~the~~ grains every 2 or 3 hours

II part - page 104 -



American Medical Library

PRACTICAL OBSERVATIONS

ON VARIOUS SUBJECTS RELATING TO

MIDWIFERY.

BY JAMES HAMILTON, M.D., F.R.S.E.,

PROFESSOR OF MEDICINE AND MIDWIFERY, &C., IN THE UNIVERSITY
OF EDINBURGH.

THE
Philadelphia Academy of Medicine,
~~NOT TO BE REMOVED.~~

PHILADELPHIA

PUBLISHED BY A. WALDIE, NO. 46 CARPENTER ST.

1837.

guyana

ADVERTISEMENT.

In the following pages, the object of the author is to record those deviations from the established modes of practice, in several ordinary affections of women, which the experience of nearly half a century has led him to adopt and to recommend.

He has thus followed the example of his old pupil, Dr. Gooch, of London, whose valuable practical observations have elucidated several important subjects relating to midwifery; but with this difference—that he publishes his opinions while still actively engaged in the duties of his profession. It has occurred to him, that, by this plan, he may have an opportunity of reconsidering, by actual observation in practice, any particular subject on which he may be alleged to have taken an erroneous view.

From the nature of this publication, it has been necessary to refer to the practical doctrines of his cotemporaries; but, in doing so, the author trusts that he has adhered to the rule which he has invariably adopted in lecturing—that of noticing only the opinions of those who have deservedly acquired public estimation, and of stating his objections to those opinions, with the courtesy and respect due to such professional brethren. His great aim has always been to improve that department of medical science which he has been teaching in the University of Edinburgh for above forty years.

Edinburgh, 23 St. Andrew's Square,
January 11, 1836.



CONTENTS.

	PAGE
On the Prolapsus of the Uterus, - - - - - - - - - -	1
On Polypous Excrescence of the Uterus, - - - - - - - - -	12
On the Enlargement of the Ovary, - - - - - - - - -	23
Evidences or Signs of Human Pregnancy, - - - - - - - -	42
On the Duration of Human Pregnancy, - - - - - - - -	53
On the Management of the First Stage of Labour, - - - - - - -	59
On the Management of the Second Stage of Natural Labour, - - - - -	75
On the Management of the Third Stage of Labour, - - - - - -	84

APPENDIX.

Dr. Moir's Observations on the Stethoscope, - - - - - - - -	97
--	----



PRACTICAL OBSERVATIONS

ON

MIDWIFERY.

ON PROLAPSUS OF THE UTERUS.

Of the chronic diseases arising from a local cause, to which women in civilised society are liable, prolapsus uteri, or displacement of the womb, is perhaps the most frequent. As it occurs in all ranks, and, although not a dangerous affection, is always more or less annoying—often occasioning, too, a broken state of health—it must seem wonderful that medical men should have fallen into the most extraordinary errors respecting its nature and treatment, more especially since their attention to the subject must have been particularly directed by daily observation.

The symptoms of this disease are not uniform in every case, as those of local disorders commonly are; for in some individuals they steal on gradually, while in others they force themselves suddenly on the notice of the patient. Thus, in many cases, an uneasy sense of pressure, or bearing down, with weariness in the loins on standing or walking, are first experienced; and by and by those feelings, occurring in an aggravated degree, are found to occasion more than usually frequent calls to pass urine. In other cases the patient, without any previous warning, suddenly feels, in the act of relieving the bowels, something forced down upon, or partially thrust out of, the vulva.

But the progress of the disease is fully as irregular in different individuals as the original incipient symptoms. In robust women of the lower ranks, little inconvenience is experienced till the uterus be actually protruded through the external parts; and, even under such circumstances, if they manage by any mechanical contrivance to prevent the actual protrusion, they can make all the ordinary exertions required by their mode of life—such as carrying milk, or vegetables, or fish, through a large city.

Far different is the progress of the disease in delicate individuals in the higher ranks. The uneasy feelings on standing or walking lead them to avoid all exertions which are productive of such sufferings. Their general health soon declines from want of air and exercise, and the increasing descent of the uterus produces an

unusual discharge from the mucous glands of the vagina. This aggravates the general weakness, as well as the sense of weariness in the back; a broken constitution is the natural consequence.

It is a general opinion, among many respectable practitioners, that the sufferings of the patient are proportioned to the degree of the disease. Accordingly, Gardien, vol. i., page 178, considers that there are three degrees or stages of the disease; viz: relaxation, falling down, and protrusion. But experience shows that peculiarity of constitution has more influence than the degree of displacement. Thus, it consists with the author's knowledge, that a woman, with a protrusion which in size equaled a quart bottle, and in whom both the protruded parts and the internal surface of the thighs were extensively ulcerated, maintained for four years an epileptic husband and four children by the laborious occupation (now exploded in this city) of a water-carrier. This woman's general health was unimpaired, and she asserted that her appetite was good, and that she had no morbid affection whatever of the stomach or bowels. Yet the protruded parts must have occasioned such displacement of the abdominal viscera, that, *a priori*, it might have been expected that the digestive functions should have been greatly deranged. In the case of a poor woman named Watkins, who died in the Kensington work-house—in whom the protruded parts measured more than fifteen inches in circumference, and six and a half in length—it was found that they contained, besides the uterus, the urinary bladder, with a portion of the *meatus urinarius*, part of the rectum, the fallopian tubes, and the small intestines.¹

The author has seen three other cases where the size of the protruded parts was enormous, though certainly not equal to that of Watkins; and two of the individuals were gaining their livelihood as laundresses, and the third as a milk woman, walking through this city at least two hours twice a day.

These cases suggest a doubt in respect to the cause of the dyspeptic complaints which attend even slight degrees of prolapsus in the better ranks. Such complaints have been supposed, by the latest authors, to be the effect of sympathy between the stomach and uterus, or of displacement of the abdominal viscera. Ought not the above facts to suggest, to an unprejudiced mind, the idea that the treatment pursued in the better ranks has a very considerable influence in occasioning the secondary symptoms? This was certainly the inference which the author deduced from the cases above mentioned.

While the subjects of this disease may be said to be most usually women who have been mothers, there can be no doubt that virgins, as well as women who, though married, have never conceived, are occasionally afflicted with it. In the lower ranks in this country, few women who have had a family attain the fiftieth year without being affected with some degree of the disease.

¹ Observations on the Diseases of Females, &c., by Sir Chas. M. Clarke, part i., pages 64, 65, and 119.

There are at least three diseases with which prolapsus uteri may be confounded, and from which, of course, it is necessary to distinguish it; viz: chronic enlargement of the uterus, polypous excrescence, and incipient scirrhus. Nothing but actual examination can enable the practitioner to draw the line of distinction. In this disease the os uteri forms the apex of the protruding part, in whatever position the patient may be placed, and no tenderness whatever is experienced from pressing upon the part.

Some authors have divided cases of prolapsus into those of *antiversion*, *retroversion*, &c.; but this is a most unnecessary distinction—because the exact position which the uterus assumes, when displaced, must be influenced by the relative condition of the adjoining parts, and because the practice cannot be at all regulated by that circumstance.

The prognosis in this chronic disease may be always favourable, in so far as life is concerned. For example, no medical man of competent knowledge would consider that the life of a patient with prolapsus uteri was not insurable. But, as to the probability of the disease being cured, that must depend on several considerations; viz: the age of the patient, her general health, the apparent cause of her disease, and its duration.

In elderly relaxed women, relief may be afforded, but nothing more should be expected or promised. In young healthy subjects, a complete cure may be accomplished, unless there have been the mechanical destruction (from mismanagement during child-bearing) of some of the parts which naturally support the womb.

Formerly, the universally received opinion respecting the mechanical cause of prolapsus uteri was, that it was relaxation of the ligaments which support that part; and, although it is well known that laceration of the perinæum or of the posterior extremity of the vagina was always followed by falling down of the womb, the fact was disregarded.

It might have been expected that our improved knowledge of anatomy might have corrected this erroneous opinion, but it evidently has not; for, in the works of very eminent and recent authors, it will be found that the old doctrine is implicitly adopted, either professedly or tacitly.¹

Mons. Gardien has seen the fallacy of this doctrine, for he denies (vol. i., p. 177) that the broad and round ligaments support the uterus in situ; and he asserts, that “the true predisponent cause,” as he calls it, “is the softening and relaxation of the membranes of the vagina, and of the cellular tissue which unites them to the linings of the pelvis.” Notwithstanding his improved knowledge of the cause of the disease, Mons. Gardien has suggested no change in the practice. It requires only a very little attention to the structure of the contents of the pelvis in the female, to ascertain that

¹ *Vide* Observations on the Diseases of Females, by Sir Chas. M. Clarke, part i., page 68, line 19; Professor Burns’s Principles of Midwifery, eighth edition, page 130, line 10; Professor Davis’s Principles and Practice of Obstetric Medicine, page 548, line 16.

Mons. Gardien's remark, that the ligaments of the uterus do not retain it in its proper position, is correct.

The expansion of the peritoneal coat across the brim of the pelvis has been, by many respectable authors (such as Scarpa, &c.), supposed to serve as a second diaphragm in preventing the contents of the abdomen from displacing those of the pelvis, as the true diaphragm prevents the contents of the chest from deranging those of the abdomen. But the idea is more ingenious than accurate. The diaphragm is a strong muscle—the peritoneal expansion alluded to is a weak yielding membrane. The action of the diaphragm would frequently displace the stomach or intestines, were it not counteracted by the resistance of the abdominal muscles. Accordingly, wherever there is lesion or relaxation of those muscles, a protrusion or hernia follows.

But the expansion of the peritoneum alluded to could, from the feebleness of its texture, have little influence in preserving the contents of the pelvis in situ, were it not for the strong counter pressure supplied by the muscles which line the pelvis, and fill up its openings and outlet. Although, therefore, the womb in the unimpregnated state appears, in the dead subject, to be supported by the peritoneum, (as that membrane covers a great part of it, and connects it to the sides of the pelvis,) yet it is evident that the bladder, the vagina, the rectum, and more especially the muscles lining the pelvis, and those connecting the lower part of the trunk and the inferior extremities, mainly contribute to hold the uterus in its natural position. Professor Burns, in his eighth edition, page 129, has very well explained this, and yet he has not been led to the proper inference in respect to the nature of prolapsus uteri.¹

It will be found that, in every case of prolapsus uteri, the vagina, or bladder, or rectum, or muscles lining the pelvis or filling up its outlet, are debilitated or lacerated, and therefore the relaxation of the peritoneum and its productions (the ligaments of the uterus) is the effect of the prolapsus, and not the cause.

Cases of prolapsus in virgins, it may be alleged, furnish an objection to this reasoning. Admitting, it may be urged, that frequent child-bearing, accidents during parturition, and debilitating diseases, by widening—or that corporeal injuries, by lacerating the vagina or external parts, or by relaxing the muscles at the outlet of the pelvis—may allow the uterus to be forced down, how can the accidental and sudden prolapsus which now and then occurs in young healthy virgins be accounted for?

Such cases may be easily explained. The accident in those cases is the effect of a sudden exertion in moving the body, at a time when the natural supports of the uterus are relaxed—viz: during menstruation. While that process goes on, every part connected with the uterus feels flabby and open to the woman herself; and any violent action of the locomotive muscles—as in leaping, or dancing, or running—must occasion displacement of the uterus, in

¹ *Vide Loco Citato*, from line 28, page 129, onwards.

the same way that it would force out a portion of the intestine if the abdominal muscles were weakened at their ring.

The treatment hitherto pursued in cases of prolapsus uteri has been the following—viz: in incipient cases, the horizontal posture—the application of cold to the loins, external parts, and vagina—the injection of styptic liquors into the vagina, with the internal use of tonic medicines; and in cases of long standing, in addition to the above means, the employment of mechanical expedients for supporting the uterus, called pessaries. At least such are the means for the cure of this disease recommended by the most eminent and recent authors.¹

On the utility of the first of those means—viz: horizontal posture—all the latest respectable authors cordially concur. Sir Chas. M. Clarke says (page 103), “In every case of procidentia much may be done by posture; the patient should lie as much as possible upon a bed or upon a sofa; and a mattress, as presenting a flatter surface, and being less likely to debilitate, is preferable to a bed of down or feathers. The rooms which the patients inhabit should be kept cool.”

Professor Burns’s words are (page 131), “All exertions are to be avoided, and the recumbent posture much observed. This last advice, it is evident, must, in the early stage, be the most effectual means, as it allows time and opportunity for the parts to recover their tone and tightness.”

Mons. Gardien says (vol. i., p. 180), that “The patient ought to be directed to confine herself to the horizontal posture for a long time.”

Dr. Davis inculcates the same doctrine (page 550): “It will be found,” he says, “almost always necessary to superadd, to any measures of constitutional treatment suggested by the general indication above adverted to, the obligation of an immediate return to the practice of the duty previously neglected—that of using the horizontal position either altogether, or for many hours daily, according to the more or less urgent claims of the case. At the very commencement of a bearing down of this kind, the personal management in question immediately put in practice, and rigidly pursued for two or three months, might probably suffice to insure a restoration of the suspensary ligaments of the uterus to their former tone and strength.”

Although the horizontal posture immediately relieves the uneasy feelings of the patient, the author long ago ascertained that it tends not only to impair the general health, but also to aggravate the disease, by increasing the relaxation of the natural supports of the womb; and daily experience has established the validity of this opinion.

¹ *Vide* Observations on the Diseases of Females, &c., by Sir Chas. M. Clarke, part i., page 83, *et seq.*; Gardien Traité complet d’Accouchemens, vol. i., page 180; Professor Burns’s Principles of Midwifery, eighth edition, page 130; and Professor Davis’s Principles and Practice of Obstetric Medicine, page 550.

The second means proposed—viz: the application of cold, either in the form of the cold bath, or by lotions of water artificially cooled—have been highly extolled by Sir Chas. M. Clarke (p. 83, &c.). In slight cases, the cold plunge-bath furnishes an excellent auxiliary means; but the author cannot sanction the introduction of a piece of ice into the vagina, as suggested (page 90) by Sir Charles: it could answer no good purpose—that is, it could not cure the disease; while the probability is, that it would produce inflammation of the surface of the vagina.

Thirdly, as to the injecting of styptic liquors into the vagina, it is a practice to which also the author, from much experience, must object in the most explicit terms. Sir Chas. Clarke has been at very particular pains to describe the instrument to be employed for this purpose (page 90), the manner in which the injections are to be thrown up, and the medicinal substances of which they should be composed (page 95). In recommendation of astringent injections, Professor Burns cordially agrees with Sir Chas. M. Clarke (page 130). Mons. Gardien has adopted the same practice (page 180), and also Professor Davis (page 549).

Against this mode of practice the author has to offer the following, as he considers, most serious objections:—

Firstly, On the supposition that styptic injections were safe, and that they could really restore tone to the vagina, (which the author concedes for the sake of argument, for the contrary is his sincere belief,) it must be obvious that, if his view of the nature of the disease be correct, no benefit could accrue from the practice. Accordingly, no practitioner trusts to those means in cases of any considerable degree of prolapsus uteri.

Secondly, It is admitted, that, as the irritability of the mucous membrane of the vagina varies in different women, as well as in the same woman at different periods of time, the injection of strong astringents may prove injurious. Doubts are, therefore, entertained on the safety of the practice, even by those who recommend it.

Thirdly, The author's experience has convinced him that astringent injections into the vagina are apt to injure the uterus, rather than the canal into which they are thrown. He can solemnly aver, that, of the numerous cases of chronic enlargement of the uterus which have fallen under his notice, by far the greater number had been unequivocally occasioned by the use of styptic injections per vaginam.

Fourthly, The immediate effect of such injections, in cases of prolapsus uteri of any standing—viz: the diminution or suppression of leucorrhœal discharge—has been in many cases followed by distressing headaches, or obstinate inflammation of the eyes, or eruptions on the face.

For these reasons, the author for many years has objected to the use of such means—both in cases of prolapsus uteri and of leucorrhœa. He has restricted their employment to cases of ichorous discharges in consequence of cancer, or of malignant tumours of the uterus, or of decomposition of portions of the retained ovum in

cases of abortion, &c.; and, in general, he recommends vegetable preparations, or diluted chloride of lime, as the only safe injections.

It was formerly a practice in this city to employ styptic injections in cases of menorrhagia in debilitated subjects; but, many years ago, the author was called to a case which strongly evinced the impropriety of the practice. The patient was an elderly lady, who had had for several months a draining of blood per vaginam on the slightest exertion, and in whom no other organic affection had been discovered than great relaxation of the uterus. For this a solution of the sulphate of alumine had for some time been thrown up the vagina evening and morning.

When the author saw this patient, she laboured under great local irritation and smart symptomatic fever. On examining per vaginam, he found the whole of that canal thickly coated with what seemed to him an earthy substance; and, on scooping off a little of it, he ascertained it to be a combination of alum with the red particles of the blood. When all this coating was cleared off, the local irritation and symptomatic fever quickly subsided.

Against the above objections to the use of local styptics, the author is aware that innumerable cases may be cited of patients who had used astringent injections for months with perfect impunity. His explanation of such cases is, that the fluids had never been properly injected—for it is his persuasion that not one patient in ten can do this effectually.

The fourth means recommended—viz: the use of internal tonics—is admitted on all hands to be merely auxiliary, and therefore there can be no difference of opinion on that subject.

Where the disease does not readily yield to palliative treatment, the mechanical support of the uterus, by means of expedients called pessaries, has been recommended. Such contrivances appear to have been employed from the earliest periods of civilisation, and are still sanctioned by the profession in every part of the world. Sir Chas. M. Clarke and Professor Davis have printed minute directions respecting the form and adaptation of such expedients. Mons. Gardien and Professor Burns are equally partial to their employment.

But, from the earliest period of the author's professional life, he was accustomed, in lecturing, to urge the following objections against the use of pessaries:—

Firstly, They can only act as palliatives, whatever may be the degree of the disease.

Secondly, They necessarily keep up a continued irritation in the passage, and of course a mucous discharge from the vagina.

Thirdly, Unless properly adapted, they make injurious pressure on the contents of the pelvis.

Fourthly, If not frequently taken out and cleaned, they become encrusted with a calcareous matter, which proves highly irritating.

Fifthly, They subject the patient to the charge of the medical attendant for life. And

Lastly, Cases from time to time occur, where, from the laceration of the perinæum, &c., no ordinary pessary can be retained.¹

Between twenty and thirty years ago, the author ventured upon an experiment for the relief of cases where no pessary could be retained. His object was to excite inflammation on the internal surface of the vagina, in the hopes that adhesions would succeed, as he had heard of one case where an unexpected cure had in this way happened. In that case the prolapsed parts, with several portions in a state of ulceration, had been reduced, and the cohesion of the sides of the vagina had taken place, by which the return of the prolapsus was prevented.

For the purpose of imitating the above process of nature, he introduced a ball of the emplastrum ceræ into the vagina, and thus excited extensive inflammation, followed by sloughing of the whole surface, but without any favourable result.

The patient having entreated that another endeavour to relieve her should be made, he directed a thin muslin bag, containing two ounces of powdered alum, to be kept in the vagina for four and twenty hours. This also was followed by sloughing of the whole mucous membrane, but no adhesive inflammation succeeded.

These experiments having failed, the author was induced, in one very bad case, to sanction a surgical operation—viz: the bringing together the sides of the vagina by means of ligatures. The operation was very ably performed by Mr. Liston, but no union was effected; and the sufferings of the patient from the operation were such that the author resolved never to be again a party to such a practice.

Notwithstanding these objections to the use of pessaries, the author admits that he continued for many years to employ them, principally from his reluctance to reject means so universally adopted by the profession. At last, however, a case occurred

¹ Sir Chas. M. Clarke, in the work alluded to, (page 120, part i., of his *Observations on the Diseases of Females*,) has admitted this, and has proposed the following mode of supporting pessaries in cases of ruptured perinæum:—

“In almost all the cases in which the degree of the disease is so considerable, every pessary which can be introduced will be forced away by the slightest efforts of the woman—even the globular pessary (which is the best) will not be retained, neither can it be kept in the vagina by any common bandage. But, by the following contrivance, the globular pessary may be kept in the vagina. In the first place, a pessary is to be chosen of the size which the case requires, and a small slip of brass is to be attached to it by its two ends, leaving a space between the instrument and the centre of this piece of brass; a belt of leather, long enough to go round the patient's body, is also to be prepared; to the centre of which, behind, a brass wire as thick as a common quill is to be attached by a screw. This wire is now to be properly bent; and the pessary being introduced into the vagina, the wire is to be passed between the pessary and the piece of brass attached to it, and, being brought up between the thighs, it is to be attached to the fore part of the circular strap. The reduced parts are by this means supported by a pessary, and this is kept in its place by the unyielding piece of metal.”

which made him resolve to banish them from his individual practice.

An elderly lady, in the seventy-eighth year of her age, after having suffered much for a considerable time in consequence of prolapsus, consulted the author; and he found that the only pessary which could be retained was one in the form of an oval cup, about two inches and a half in length by one and three quarters in breadth, and three quarters of an inch deep, with a bottom dividing it into two equal parts. It was made of tin-plate strongly japanned. Most minute directions were given to have this pessary withdrawn once a week, and carefully cleaned.

The author heard no more of the case for six or eight months, when he was again called to visit the patient; and, to his surprise and vexation, he learned that the pessary had never been withdrawn. On examination, he found it so strongly impacted that any attempt at moving it with the finger was quite fruitless, while at the same time it excited such pain as plainly indicated some further mischief. Accordingly, it was discovered that a portion of the pessary had made its way into the rectum. It became necessary to contrive two steel-scoops adapted to the shape of the pessary, with handles and locks similar to those of the midwifery forceps, to accomplish the extraction of the pessary without further injury. The patient recovered after the operation, and survived some months.¹ From the date of that case, the author has never sanctioned the use of pessaries.

Experience having thus convinced the author that the established practice in cases of prolapsus uteri is most unsuccessful, it was incumbent on him to endeavour to contrive some other means. On the indications of cure in this disease, there could be no difference of opinion. As Sir Chas. M. Clarke has well observed, page 83, "The curative intentions appear to be, to increase the strength of the parts which are weak, and to afford a support to the tumour, the descent of which produces the symptoms."

But the latter indication should evidently be first attended to; for, unless the uterus be supported, no means for "strengthening the weak parts" could be of any avail. Observation and reflection led the author to the discovery of a mode of supporting the uterus, which is both effectual and safe, and the experience of several years has now fully established its superiority to every means hitherto suggested.

He had been accustomed for a considerable time, in cases of lacerated perinæum, to recommend the use of the T bandage, in order to secure the retention of the globe pessary. The comfort which patients experienced from this bandage gradually led him to try the effect of a cushion interposed between the outlet of the pelvis and the cross strap of the bandage, withdrawing the pessary; and the experiment succeeded completely, for the patients felt perfect relief.

¹ The pessary was filled at both ends with calcareous matter, and is preserved in the collection of the author.

In every case, therefore, of prolapsus uteri, whatever may have been its degree, to which he has been called for several years past, he has suggested this very simple contrivance.

In slight cases of short standing, the circular may be made of fine linen or jean, lined with shamoy leather; but, in more serious degrees of the disease, it ought to be made of tempered steel, like that of the common truss. The cushion is to be stuffed with horse hair, and ought to be, generally speaking, about six inches in length, by three in breadth. Its thickness must be adapted to the individual case; that is, the greater the degree of relaxation of the soft parts at the outlet of the pelvis, the greater should be the thickness of the cushion. It is to be slightly tacked to the cross strap of the bandage, so as to press firmly upon all the parts requiring support. In some cases, where the perinæum had entirely given way, the author has found it necessary to combine the prolapsus ani bandage with the cushion.

This bandage is to be worn whenever the patient is out of bed, as long as any symptom of the disease is perceived. It effectually relieves the unpleasant feelings, while it enables the patient to take walking exercise, which is so essentially necessary to the relief or cure of the disease.¹

By means of this bandage the patient can stand, can sit, can walk, and even can ride with ease; and the pressure which it excites upon the weak parts has a powerful influence in strengthening them, while at the same time it has the important effect of moderating or curing leucorrheal discharge, without injury to the constitution.

After thus securing due support to the uterus, means are to be adopted to fulfil the second indication—viz: “to increase the strength of the parts which are weak;” and for this purpose due regard must be paid to the age and condition of the patient, and to the causes of the disease.

Walking exercise, according to the author's experience, is the most powerful mean which can be suggested for strengthening the natural supports of the uterus. Of course, where the patient has been much debilitated, or has been long confined to the horizontal posture, this exercise must be cautiously begun; but, whatever be the feelings of the patient, it must be gradually increased, till it equal that which an individual usually takes in the ordinary state of health.

Cold bathing, and the use of internal tonics, are to be regarded as auxiliary means only, though in many cases which occur in actual practice the previous mismanagement of the case renders their use necessary.

In young unmarried women, in whom the prolapsus has been the effect of over exertion, or of mechanical injury during menstruation, the daily use of the cold plunge-bath and of steady walk-

¹ One lady, who had been for five years confined to the horizontal posture, had at once the use of her limbs restored by this simple contrivance.

ing exercise, with the ordinary means of promoting the general health, will commonly cure the disease in the course of a few months.

Where the prolapsus has supervened to child-bearing, the same means will be found to relieve the symptoms, but there can be no chance of cure unless the patient again become pregnant. In that case, if suitable means be employed after delivery for the restoration of the whole of the uterine system to its natural condition in the unimpregnated state, the prolapsus will not again return.

The author has much reason to believe, that the process by which the uterus, after child-bearing, is restored to its healthy condition in the unimpregnated state (certainly a very wonderful one), has not hitherto obtained that attention from the profession which its importance demands. It is well known that innumerable individuals in the higher ranks never recover their original health after child-bearing; and every practitioner, who has the charge of a public hospital or dispensary, must have occasion to see almost daily cases among the lower ranks, where various complications of diseases are evidently the effect of lying-in.

All those bad cases are to be attributed to inattention to the process alluded to. In delicate women in the higher ranks, the vascular action is so feeble, that, if unassisted, it cannot produce the necessary absorption of what had been added during pregnancy. In the lower ranks, on the other hand, the exertions which their necessities compel them to make, from a very short time after delivery, are apt to interrupt this necessary process, while they mechanically force the womb out of its natural position. Every attentive practitioner must have observed, that, where healthy women of the lower ranks are duly attended to for a fortnight after delivery—as in well regulated lying-in hospitals—their recovery is more perfect at the end of a fortnight than that of women in the better ranks, under similar treatment, at the end of a month.

Prolapsus uteri, of long standing in elderly women, is to be treated as in young unmarried women; but it is the duty of the practitioner to explain that the T bandage must be worn for the remainder of life—an inconvenience trivial indeed when compared with the sufferings arising from the use of pessaries, or from the disease being neglected.

The same observations apply to those distressing cases where the uterus falls down, in consequence of laceration of the perinæum or of the vagina. Many individuals, under such circumstances, who had been for months or years confined to the horizontal posture, are now in the enjoyment of general good health, and capable of all the ordinary enjoyments of life, by means of the T bandage and cushion.

ON POLYPOUS EXCRESCENCE OF THE UTERUS.

By polypous excrescence of the uterus is meant a tumour, adhering by a peduncle to some part of the internal surface of the uterus or to its orifice, which is insensible on being pressed or scratched, and which is found to be of various sizes, from that of a filbert to that of an infant's head—and of various texture, from the softness of a clot of blood to the firmness of gristle.

Perhaps, in the majority of cases, this excrescence, for some time after its formation, produces no evident influence upon the patient; and in most instances little injury arises from the disease, till it have acquired a certain size. There are, however, occasional exceptions to this remark, which will be particularly adverted to in the progress of these observations.

It has been well remarked by the late Dr. Gooch, that this disease is of more frequent occurrence than has been generally supposed. Indeed, there is reason to believe that many individuals die from this affliction, in whom the nature of the complaint has not been even suspected; for, in many cases, the nature of the disease is so obscure as to mislead the general practitioner.

The most ordinary symptom of polypous excrescence of the uterus is an increased flow at the usual menstrual periods, accompanied sooner or later with a discharge of coagula. After a certain progress, there supervenes between the periods a continued drain, in more or less quantity, of what has been vulgarly called the whites, accompanied with sense of weariness in the back, and in some cases with a sense of pressure or bearing down, on walking or standing.

In the further progress of the disease, the draining from the vagina increases in quantity, and becomes acrimonious and offensive. When this change happens, the state of the general health is rapidly impaired, œdematous swellings of the lower extremities follow, and, if no effectual means be employed, the patient sinks exhausted.

Dr. Gooch, in his valuable observations on this disease, (page 266,) states, that the ordinary fatal termination is a fit of fainting or convulsion from sudden increase of hemorrhage. It is singular, that, with one exception, such cases have never occurred to the author of these observations, although he has been called to witness many fatal cases where the disease had been misunderstood.

But although the description above given marks the usual progress of the disease, many cases occur in practice where there is no such uniformity of symptoms. Thus, in some cases, many months elapse after the frequent uterine hemorrhage had indicated the existence of the disease before any draining from the vagina, during the intervals between the menstrual periods, takes place.

In proof of this, the author may mention that he was called, some years ago, to see an unmarried lady nearly fifty years of age, who for a considerable time had had excessive uterine hemorrhage,

at what she considered the usual menstrual periods. She objected to any examination, and of course no remedies were suggested. At the distance of half a year he was again called to visit this patient, in consequence of the periodical hemorrhage having become greatly aggravated, and of her strength being much exhausted. He found a polypous excrescence of the size of a new-born infant's head, which literally filled the pelvis; yet, in the whole course of the disease, the patient had never had leucorrhœal discharge.

Previous to the occurrence of that case, he had been called to another patient of about the same age, who had for some years been liable to profuse uterine hemorrhage, but whose case suggested no suspicion of polypus, till an accidental incapability of passing water led to an examination; when it was discovered that an enormous polypus, as large as in the former case, was pressing upon the external parts. That patient also declared that she had had no draining between the periods.

What adds to the obscurity of those cases is, that in some patients there is no hemorrhage at the periods; and as the draining or whites, which always attend in such cases, is so common a complaint of women, and is so often unconnected with organic disease, it is not wonderful that the existence of a polypous excrescence should not be suspected.

When the polypus has attained a certain size, it might be supposed that it should occasion pressure or bearing down, and yet this does not invariably happen. The patient from whom the largest polypus in the author's possession was taken, had, within a few weeks before falling under his care, walked up and down some of the highest mountains of Britain without inconvenience or fatigue.

Perhaps these discrepancies in the symptoms may proceed from the different relative situation of those excrescences in different cases, though this conjecture must be received with certain limitations. But, to illustrate this, it is necessary to advert to the texture and locality of those excrescences.

With respect to the texture, Professor Davis has given a very minute description, which is highly interesting to the pathologist, but can be little useful to a practitioner of midwifery. It is sufficient for the latter to know, that in some cases the substance is as soft as a clot of blood, in others as firm as the hardest steatom; and that between these extreme grades there is every degree of consistence.

Dr. Gooch has fallen into a great error on this point, evidently from deferring to the high authority of Dr. Baillie. He says—"The internal structure of polypus in most cases exactly resembles the internal structure of the large white tubercle of the uterus, commonly called the fleshy tubercle. They are the same disease, differing only in the seat and mode of their attachment, and consequently in the symptoms which they produce. On cutting into them we see a hard whitish substance, intercepted by numerous partitions."

In these observations Dr. Gooch has mistaken the exceptions for the general rule. The author has not met with half a dozen such cases in the course of practice. Polypous excrescences, when of a large size, are commonly of a soft fibrous texture, with numerous loaded veins on their surface—a fact which Dr. Gooch himself admits: for he says, “This, however, is not always its structure; it is sometimes of a much softer and looser consistence, and sometimes has considerable cavities.” And he further says, in describing a polypous excrescence which he saw in the orifice of the vagina—“It was of a pale flesh colour, mottled, or rather striped with large blue veins, like the round balls of soap at the windows of perfumers” (page 257). Nobody has ever seen such an appearance in a fleshy tubercle of the uterus.

Generally speaking, the shape of polypous excrescences of the uterus is globular or pyriform, adhering by a distinct neck or peduncle; but the author has met with a few cases where it was in the form of a small eel or serpent, without any regular peduncle. In one case this elongated excrescence was one inch in diameter, ten inches in length, and its loose extremity was forked.

It has been generally supposed that the external surface of those excrescences is a continuation of the membrane investing the internal surface of the uterus, but some preparations in the author's possession lead him to doubt this opinion. As this, however, is merely a matter of curiosity, it is unnecessary to state the circumstances which have led to the author's doubt on the established doctrine.

Another opinion of Dr. Gooch, respecting the texture of those excrescences, seems equally erroneous. He supposed that the hemorrhage in those cases proceeds from the surface of the excrescence, and not from that of the uterus; and, in confirmation of this opinion, he appeals to the well-known fact, that, after a ligature is applied to the polypus, the hemorrhage ceases.

But the experience of the author leads him to entertain a very different opinion on this subject; for, in the *first* place, in no instance to which he has been called has there ever been any bloody discharge from the surface of the polypus, notwithstanding any liberty he might have taken in pressing upon it, or in attempting to twirl it round.

Secondly, He has seen several cases where frightful hemorrhage was apparently produced by an excrescence not larger than a filbert, attached to the inner border of the os uteri, and having a smooth polished surface.

Thirdly, He witnessed upon one occasion a case of fatal uterine hemorrhage, three weeks after delivery, where the only apparent cause was a polypous excrescence, not larger than a horse-bean, situated upon the internal posterior surface of the uterus, about three inches above the orifice.

The author is therefore inclined to explain the cessation of the hemorrhage, after the application of the ligature round the excrescence, upon a very different principle from that adopted by Dr.

Gooch. He presumes that, when the tumour is in a state of growth, there must be a certain unusual determination of blood to the vessels which nourish it; but this cannot take place without an increased flow also being directed to the uterine vessels. Indeed, there is perfect evidence of this—for the uterus keeps pace in increase of size with that of the tumour. Now, if there be an increased determination to the uterine vessels, such is their texture that very slight circumstances must produce a discharge from them.

When, however, by the application of a ligature, the growth of the tumour is arrested, and its life, as it may be called, destroyed, a determination of blood to it can no longer take place, and of course the uterine arteries are no longer overloaded.

The locality of these excrescences has, perhaps, more influence upon the symptoms of the disease than either the size or texture.

In some cases, the peduncle is inserted in the internal surface of the fundus uteri. Dr. Denman, many years ago, published a delineation of the appearances on dissection, where the weight of the tumour had inverted the unimpregnated uterus. The preparation from which that drawing was taken is in the author's collection.

More commonly, the peduncle is on one side of the uterine surface, sometimes attached to the neck, sometimes even to the lip. The author has now met with two cases in practice where a polypous excrescence, attached to the os uteri, was distinctly covered by the investing membrane of the vagina. One of the patients, a respectable farmer's wife, was the mother of eight children. She had for several months suffered from occasional uterine hemorrhage and a constant offensive draining from the vagina, and was so much reduced in strength that she could no longer walk. The excrescence was about the size of a hen's egg, with a very thick peduncle. Its surface was perfectly smooth, and, although evidently covered by the investing membrane of the vagina, it was quite insensible to the touch.¹

When the excrescence is attached to the internal surface of the body of the uterus, it must be more apt to occasion hemorrhage than where its attachment is at or near the orifice; and when, from the increase of size, it is forced into the vagina, it must produce that draining which at first is so apt to be confounded with the ordinary leucorrhœal discharge.

Polypous excrescence, like prolapsus uteri, can only be distinguished from other diseases by actual examination—a circumstance which accounts for the many victims of the disease, in this part of the world at least, where the feelings of unmarried women lead them to refuse their consent to this mode of investigation.

From prolapsus uteri, there is little difficulty in distinguishing polypus. In many cases, the shape of the tumour of prolapsus uteri would at once point out the distinction; but there are more

¹ The patient's health was rapidly restored on the removal of the tumour, but he has been informed that she now labours under some other uterine affection.

certain marks which young practitioners must keep in recollection, viz:—*First*, the opening at the apex of the tumour, which is the os uteri; *secondly*, the sensibility to pressure; *thirdly*, the relief experienced by the patient in pressing up the tumour; *fourthly*, the facility with which the investing membrane of the vagina can be ascertained to cover the tumour.

In the polypous excrescence, on the contrary, neither pressure with the finger, nor even scratching, produces any unpleasant sensation while there is no aperture at the apex, and the vagina is ascertained readily to form a distinct canal.

Sir Chas. M. Clarke remarks (page 227), that the only diseases which can be mistaken for polypus are, an inverted uterus and the cauliflower excrescence of the os uteri. Dr. Gooch more correctly substitutes malignant tumours for cauliflower excrescence.

Partial inversion of the uterus after delivery, if not immediately fatal, may, to a superficial observer, communicate the idea of polypus uteri. This mistake cannot readily happen, if the patient be in the better ranks of society, because the practitioner can learn pretty accurately the history of the case; but in patients of the lower ranks, no such accurate information can be obtained. By examination, however, the diagnosis can be at once established. In partial inversion of the uterus, the shape of the tumour resembles that of polypus; but, on its surface being pressed upon in examination, the finger is besmeared with blood, which does not happen in any case of polypus.¹

Cases of partial inversion of the uterus after delivery are, in the present improved state of practice, rare occurrences, and when they do happen they generally prove immediately fatal. In the whole course of the author's practice, he has not met with more than six or seven instances where the patient survived the accident above an hour or two.

Malignant excrescences of the uterus, although not of frequent occurrence, are occasionally met with, and may be confounded with polypous excrescence. Levret described these many years ago, under the title of *Vivaces*; and Mons. Herbiniaux, of Brussels, has also given a description of such excrescences, in his *Treatise on Polypus*, published at Brussels in 1782, page 38, as quoted by Sir Chas. M. Clarke.

Both Levret and Herbiniaux have described only one kind of malignant excrescence—viz: that which has a soft texture, is insensible, adheres by a broad base, and is accompanied with enlargement and painful condition of the uterus. Sir Chas. M. Clarke styles this disease the cauliflower excrescence.

Several cases of this affection have fallen under the author's notice. It is accompanied with occasional excessive hemorrhage,

¹ Dr. Denman, many years ago, published the delineation of the appearances on dissection, in a case where a patient survived the partial inversion of the uterus after delivery for four or five months; and, in the author's collection, there is a preparation exactly similar, taken from a patient who had survived that unfortunate accident above ten months.

and during the intervals of such discharges there is a continued offensive ichorous draining, which gradually impairs the health. Although invariably fatal, its progress in many instances is slow, and the fatal termination is generally preceded by many of the symptoms which characterise cancer, so that the approaches to death are painful beyond description.

In one case, which fell under the author's notice some time ago, the patient had been liable to occasional floodings for two years. She was the mother of three children, and was not above thirty-three years of age. She lingered under the disease for above two years after that date.

From the total insensibility of the excrescence, and the age and healthy constitution of the patient, the author was tempted to remove the excrescence, and to apply various local remedies to the uterus. For a time these means seemed successful, and the patient was enabled to go again into society; but by and by the fungus again sprouted, and for many weeks before death the sufferings of the patient were indescribable.

Cauliflower excrescence, by which Sir Chas. M. Clarke designates such malignant tumours, is an incorrect expression, and may mislead inexperienced practitioners. The term implies both a granulated and a firm surface, whereas, in by far the greater number of those malignant excrescences, the surface communicates the feeling of a firm clot of blood, or rather of a collection of firm clots of blood.

There is, however, an excrescence common both to the vagina and to the os uteri occasionally met with, which has really a granulated and firm surface like that of cauliflower, and which requires to be distinguished. It is of the nature of a collection of warts, and differs from the malignant cases by there being no pain in the parts to which it is attached. This excrescence always admits of a cure—for the diseased parts can be readily separated by the fingers, and the application of savine ointment to the surface to which it had adhered prevents a return of the disease.

This warty excrescence, as it may be called, usually occurs towards the decline of life; but the author, some years ago, saw a case where the patient was under twenty-five years of age, and was in the sixth month of pregnancy.

Another kind of excrescence with a granulated surface, upon one occasion, fell under the author's observation. The patient was in the fiftieth year of her age, and had been long married without having had any family. He learned that for six months she had been affected with constant draining of offensive ichorous matter from the vagina, attended with stinging, burning pain in the region of the womb, and with occasional hemorrhage. She was then in a state of great emaciation and debility, but he was assured that, previous to her present complaints, she had been a plump healthy woman.

On examination, he ascertained that the uterus was enlarged and painful, and that it contained a firm, granulated, globular tumour,

about the size of an orange. Its surface adhered so slightly to the whole interior of the uterus that he had no difficulty in bringing it away with his fingers. No alleviation of the symptoms followed, and the patient sunk in about six weeks.

One case which the author met with might lead to the supposition, that sometimes malignant fungus and warty excrescences may co-exist. The patient had long had an offensive discharge per vaginam; and when she fell under the author's notice, it was at once ascertained that she had a polypous excrescence attached to the internal surface of the uterus. This was removed by the usual means, and for some time the patient's uterine health seemed re-established. By and by, however, the offensive discharge per vaginam again began, and gradually increased both in quantity and acrimony, in so much that the external parts were ulcerated. Under these circumstances the author was again called to see this patient. He found a large spongy mass, with a granulated surface, as if covered with warts, adhering to the os uteri and the upper part of the vagina, while the uterus itself was considerably enlarged and exquisitely painful to the touch. Palliative means gave temporary relief, but the patient survived only a few weeks.

Fungus hæmatodes is another variety of malignant exerescence, of which the author has seen several cases. It adheres by a broad base, has a smooth surface and a spongy feel.

All these varieties of malignant excrescences may be distinguished from the true polypus uteri by their having no peduncle, and by the uterus being always swollen and painful to the touch.

There can be no difficulty in understanding the injury to health produced by malignant excrescences of the womb, but the author was for many years puzzled to account for the rapid declension of strength which occurs in many cases of true polypus, even where the hemorrhages have been neither frequent nor profuse. At last a case occurred which seemed to him to explain the circumstance.

He was requested to sanction the operation in the case of a lady between thirty and forty years of age, then under the care of an eminent surgeon. There could be no doubt on the propriety of the practice; but the surgeon, much against the author's advice, insisted that the general health of the patient should be improved before the application of the ligature, and with that view recommended a course of tonics. The patient suddenly and unexpectedly sunk within the week.

When the body was examined, the abdominal muscles appeared covered with a thick layer of fat, and every part except the uterus was sound. A polypous excrescence, about the size of a large pear, was seen adhering to the internal surface of the uterus; and round its peduncle, to the breadth of half an inch, a distinct ulceration was manifest. In the author's opinion, a morbid poison had issued from this ulceration, the absorption of which had occasioned death.

On this principle, both the extraordinary prostration of strength, which is the consequence of polypus uteri, and the fatality of the disease when it is neglected, can be explained.

Candour, however, leads him to state, that in the early part of his professional life he saw several cases where, from the size of the polypus, an operation was deemed impracticable, and where, nevertheless, life was protracted for several years. In one case the patient, an unmarried woman between thirty and forty years of age, lived seven years after the whole pelvis was filled with the tumour, in so much that the sufferer had been obliged, during all that time, to empty the bladder by means of the catheter.

This case, however, was not attended with the excessive debility which commonly accompanies the disease. Its termination was by dropsy, which perhaps may have been occasioned rather by the mode of living than by the disease; for the patient above alluded to had, for years before her death, indulged in large doses of opium and ardent spirits. She had been accustomed, for at least three years before she sunk, to take daily four ounces of laudanum, and very often an English pint of ardent spirits.

Respecting the prognosis in cases of polypus uteri, the author's experience leads him to differ from the late Dr. Gooch, who says—"If mistaken and neglected, it occasions the death of the patient; if detected and removed, she not only lives but regains perfect health. The case of polypus of the uterus affords one of the most striking instances of the triumph of our art." In both these propositions, Dr. Gooch has expressed himself too strongly.

Conceding that neglected cases must usually end fatally, there can be no doubt of the fact (for it has fallen under the author's observation), that sometimes, by an effort of nature, the polypus is separated and expelled, either in the act of vomiting, or by strong expulsive uterine pains. In the author's collection there is a very large polypus, which had been thus naturally thrown off in the case of an unmarried lady; and her health, which had been previously much impaired, was completely restored.

On the other hand, the removal of the tumour, even although safely effected, does not invariably secure the recovery of the patient, of which the author has witnessed the three following remarkable instances.

A very robust woman, between forty and fifty years of age, who had had a family, but was then in the capacity of a servant, was several years ago brought into the Royal Infirmary here, in consequence of the sudden protrusion of a bulky body through the vulva, which had been occasioned by a violent exertion in the exercise of her duty. The author was requested, by the medical officers of the institution, to visit her; and he ascertained, what he had never seen before, nor has ever seen since, that the protrusion was a double-headed polypus, like two large globe pessaries, adhering by a single stem. A ligature was applied by the attending surgeon, the late Dr. Wardrop, and in four days the polypus dropped.

After the operation, the patient, by the existing regulations of the hospital, was placed in the servant's ward, and consequently, after the dropping of the tumour, she was no longer under the charge of the surgeon. On the second day after this, she was found to be

labouring under enteritis in a very violent degree, and she died within twenty-four hours.

Some years after this occurrence, the author was requested to visit a lady (the mother of a family) in the forty-ninth year of her age, who stated that for six months she had had a variety of complaints which indicated some uterine disease. On examination, it was ascertained that there was a polypous excrescence of the size of a hen's egg attached to the internal surface of the uterus by a narrow peduncle. The patient not only readily assented to an operation, but urgently requested that it should be performed without delay. Within an hour, therefore, the ligature was applied, and the tumour dropped at the end of the third day.

There having been no relief from the bowels from the date of the operation, a dose of castor oil was prescribed on the day after the ligature came away. When the author paid his second visit that day (about five of the afternoon), he found the patient complaining of pain in the bowels, which she herself attributed to the operation of the medicine, and to the previous constipation. But the pain having become aggravated in the course of the evening, the family medical attendant, a most judicious practitioner, was sent for. He considered that enteritis had taken place, and bled the patient accordingly. When the author saw her two hours after this, he found her still in pain, with an imperceptible pulse, and she sunk in a few hours.

In the third case, the circumstances were still more unexpected. The lady was above sixty-five years of age, and the author had succeeded in separating a polypus of a larger size than he has ever seen in any collection as having been removed from the living body. This lady seemed so remarkably well after the polypus dropped, that she changed her lodgings merely as a matter of taste. Within the week she was seized with a deep-seated pain in the chest, unaccompanied with cough, but with a frequent pulse. A copious bleeding, with antimonials and laxatives, quickly relieved the pain. On the following morning the convalescence seemed established—for there was no pain, and the pulse, from one hundred and twenty, had subsided to ninety-two in the minute. The author's fears having been excited, from the result of the two former cases, and the patient being a remarkably stout person, about fourteen ounces of blood were drawn, professedly as a measure of precaution, and the low diet and antimonial medicines were directed to be continued. Next day the patient was so much better that she insisted on having an improved diet, which, however, was agreed to only in a limited degree. She continued apparently well till bed-time, when delirium, with an affection of the breathing, suddenly supervened, and she expired within four hours.

Notwithstanding those cases, Dr. Gooch's general eulogium on the success of the operation may be admitted, on the supposition that the operation is properly performed, for in many cases it is one of the most difficult and dangerous operations of surgery; and from the experience of the author, he is compelled to dissent from

the opinion of Dr. Gooch, that "any surgeon with a proper instrument is competent to remove the polypus." The author has not only operated on several patients who had been dismissed from public hospitals as incurable, but he has seen some of the most eminent practical surgeons of this part of the kingdom foiled in their endeavours to apply the ligature.

With respect to the causes of those excrescences, several very ingenious speculations have been published; but all conjectures upon the subject are unnecessary in a practical point of view, it being sufficient to remark that neither peculiarity of constitution nor mode of living can account for those excrescences. The author has seen as many cases of the disease in virgins as in married women. He has seen several cases where individuals, from whom he had separated polypi in their virgin state, had afterwards, on being married, children without danger or difficulty.

British practitioners have now universally agreed, that the safe mode of operating in those cases is by ligature, though several eminent French surgeons have lately preferred the double operation of tying the polypus, and then cutting it off. This latter practice, however, must be impracticable in many cases, and *may be* dangerous; whereas the only danger attending the ligature arises from the risk of including a portion of the uterus, and the French operation does not afford any better chance of avoiding that hazard than that adopted by the British.

For the application of the ligature, many ingenious mechanical contrivances have been invented; but the author has always employed the most simple means, and, during the last forty years, he has never been foiled in his endeavours.

Silver wire possesses two most important advantages over every other kind of ligature, for it can be applied over the largest polypi by the fingers alone, without any of the complicated mechanical contrivances which have been proposed, and it can be drawn down to the very surface of the excrescence, thereby precluding the chance of involving the uterus.²

Inexperienced practitioners cannot, perhaps, duly appreciate the former of these advantages, for the various instruments invented for tying polypous excrescences appear so ingenious, and are recommended with so much confidence by the inventors, that they cannot imagine that such means should fail. The author has already stated, that he has repeatedly succeeded in applying the ligature and removing the polypus in cases where patients had been dismissed from public hospitals as incurable, and in all those cases he has attributed his success to the use of the silver wire.

It has been already explained, that the great danger of the operation arises from including some portion of the uterus in the ligature; but if silver wire be employed, such an untoward occur-

¹ Gooch, page 261.

² Professor Davis, page 637, *et seq.*, has recorded several cases where the uterus was included in the ligature and proved fatal. In those cases waxed thread must have been employed.

rence must be owing to the awkwardness of the practitioner; whereas, if a waxed thread be preferred, no dexterity of the practitioner could furnish a security against this accident, for the plain reason, that the lubricity of the silver wire facilitates its being drawn down to the very upper surface of the excrescence, whereas a waxed thread must adhere to whatever spot it is applied.

Upon these principles the author has always employed silver wire as the ligature. Having upon more than one occasion, in the early part of his professional life, taken the silver wire furnished by the cutlers, he was foiled at first in his endeavours to remove the excrescence, from the wire having given way in consequence of containing copper alloy, and therefore, for the last thirty years, he has been accustomed to employ pure silver wire drawn of the thickness of the third string of a violin.

His mode of operating in those cases is very simple. Where the polypus is small, he carries up a noose of the wire by means of Levret's double canula; but where it is large, he takes the wire, and, with his fingers, presses it up round and round till it be carried above the bulky part of the tumour. He then, without crossing the portions of the wire, draws down as far as the tumour will permit. The ends of the wire are then passed through the double canula, and drawn tightly till the patient complains of pain, when they are fixed round the rings of the canula. On the following day the ligature is again tightened, by drawing with pliers one side of the wire, and the same operation is repeated every day till the tumour drop. In the mean while, the canula is covered with lint, and the patient (who is necessarily kept under low diet and in bed) is directed so to support the canula in the act of making water, or having relief from her bowels, as to run no risk of prematurely forcing off the excrescence. It may be remarked, by the by, that no imprudence upon her part could do any other injury, which is an additional argument in favour of the safety and the superiority of this very simple mode of operating.

By the cautious proceeding of desisting from tightening the ligature whenever pain is felt, all risk of injury has been avoided in the author's practice; but it has repeatedly happened that above a fortnight has elapsed between the application of the ligature and the dropping of the excrescence. In some of those cases, the wire has been drawn to such an extent that there only remained what filled the canula, and yet the polypus was not separated. In those cases a second wire was easily applied, and the excrescence dropped next day. In one case, some time ago, where this happened, it was found that the polypus was held so firmly by the first canula, that it required a penknife to separate it, and yet the aperture of the wire could not admit more than a bodkin. This case suggested to the author the contrivance of a triple canula, and this he has used ever since. The ends of the wire are drawn through the outer canula, and the middle one is left for the purpose of passing up a sharpened wire to cut the peduncle if necessary.

In unmarried women, if the polypus be of a large size, there is

considerable difficulty in extracting it after it has been separated from its attachment. Thus, in two different cases where the polypus was of the size of an infant's head, it became necessary to use the perforator and crotchet; and even with the assistance of those instruments, the operation proved a very tedious and a very painful one. In both instances it required considerably above an hour before the extraction was completed. The subjects of those most difficult and painful operations now enjoy good health.

ENLARGEMENT OF THE OVARY.

One of the most common local diseases peculiar to women, is enlargement of the ovary; and it is met with in subjects of every age, from puberty up to above the eightieth year. No constitution seems exempt from it, and virgins as well as married women are liable to it. It does not prevent pregnancy, nor does it seem to be influenced by the barrenness of married women.

Before there be any direct evidence of this disease, it has generally made a certain progress; and although there may be some data, from the appearances in dead bodies, for conjecturing the phenomena of the early stages of the disease, practically speaking, a considerable advance must always have taken place before either the patient or the practitioner can be aware of its existence. That there may be exceptions to this remark is not denied, and the author readily admits that he has seen such, and he well recollects two remarkable instances.

Of these, the first was an unmarried lady, twenty-seven years of age. She was apparently in good health; but in the act of being dressed for a ball, at a time when tight lacing was the fashion, she screamed out that her maid hurt her on pressing on a particular point of the left side. This led to an examination of the seat of pain, and it was discovered that, upon the left side of the belly, there was a circumscribed tumour of the size of a goose egg, slightly painful to the touch, and which eventually proved to be the left ovarium.

In the second case, the lady was newly married, having been apparently in good health, but within the fortnight after marriage it was discovered that there was a circumscribed enlargement at the lower part of the belly on one side, and great alarm was naturally excited. This lady has had a family, and the enlargement has continued stationary for above forty years.

Some other cases have fallen under the author's notice, where, from the occurrence of accidents, or of inflammatory or spasmodic affections, it had become necessary to examine the state of the abdomen, and a small circumscribed enlargement had been discovered. In one of those cases the tumour remained stationary for

fourteen years, at the end of which time the patient died from an acute inflammatory affection, and the tumour was found to be a steatom adhering to the mesentery. In the other cases, symptoms of diseased ovary gradually took place.

With these exceptions, the first evidences of the disease in most cases are either an enlargement of the belly, or a deep seated pain towards one side of its lower part, with sense of numbness in the corresponding lower extremity. But in many instances, no apprehension of the nature of the disease is entertained by the patient, till she feel a decided increase of bulk, with a difficulty in stooping or in moving about with her usual alacrity. Married women not unfrequently mistake those circumstances for evidences of pregnancy.

Few local diseases vary so much in their progress in different cases as that under consideration. Innumerable instances occur in practice, where the disease neither injures health nor shortens life. On the other hand, in many cases, after a certain progress, painful and alarming symptoms suddenly supervene, and prove rapidly fatal. Between these two extremes every variety is met with. The author has repeatedly seen cases where the disease had existed, without even inconvenience to the individual, for half a century, and he has seen other cases where the patient sunk within a year after the first discovery of the enlargement.

Several patients whom the author has attended, have had a family while labouring under this disease. In two cases, a spontaneous cure happened under such circumstances. In one of the cases (the patient being then in the twenty-eighth year of her age) the enlargement disappeared after the birth of her fourth child, but it had begun to subside before pregnancy. The circumstances of the other case were more remarkable. The lady had two unmarried sisters, who had long been affected with enlargement of the ovary, and who eventually died from the disease. After this lady was delivered of her sixth child, it was discovered that the left ovary was enlarged to the size of a cocoanut, and the author augured most unfavourably of the event. She again became pregnant, and after the birth of her seventh child, the enlarged ovary could be no longer felt. She has since then continued in perfect health, and above fifteen years have elapsed.

Several individuals, within the author's knowledge, have dragged on a miserable existence under this disease for between twenty and thirty years, although the bulk had become so great that the size of the belly equaled that of a pregnant woman at the full time. These discrepancies in the progress and symptoms of the disease are explained only by what is observed after death, for it seldom happens that, during life, there are any marks by which the probable course of the disease can be foretold.

Various changes of texture occasion enlargement of the ovary; and a knowledge of these cannot, in general, be acquired during the life of the patient. Dr. Baillie, in his *Morbid Anatomy*, has

given an excellent enumeration of those changes. They may be briefly stated to be the following:—

Firstly—A fibrous texture without any cavity, constituting a parabysma.

Secondly—An accumulation of interstitial fluid within the proper coat of the ovary.

Thirdly—An accumulation of fluid of different degrees of consistence in cysts or sacs.

Fourthly—A collection of hydatids of various sizes.

Fifthly—A complication of fatty tumours with hydatids.

Sixthly—Indurations, like scirrhusities, complicated with the cysts, or sacs, or hydatids.

From this enumeration of the morbid conditions of the ovaries, the discrepancies in the symptoms and in the progress may be explained. For example, a fibrous parabysma may proceed so slowly in its growth that many years may elapse before it at all injure health, of which the author has seen many cases. One of the most remarkable cases has occurred lately in the practice of his friend, Dr. Walker, of Dollar. The patient had laboured under the disease for nearly twenty years, and, till within a few months of her death, had enjoyed tolerable health, but the parabysma, after death, weighed thirty-one pounds.

A partial accumulation of the interstitial fluid may exist for years without producing any morbid effect. Even a collection of fluid within cysts or sacs may for years occasion little inconvenience; but, in general, such collections are apt to increase, and to make injurious pressure on the neighbouring parts. The same may be said of hydatids, which have been found of various sizes, from that of a garden pea to that of an orange.

Indurations, especially if complicated with cysts, are apt to become inflamed, and hence to occasion pain and fever. Suppuration within the cysts is not uncommon, and necessarily adds to the sufferings and the danger of the patient.

Enlargement of the ovary, even after a certain advance in its progress, is with great difficulty distinguished during life. It may be confounded in its early stages with tubercles of the mesentery or of the peritoneum, with scirrhusity of the pylorus or of the caput cœcum coli, with collections of indurated fæces in that portion of the intestinal canal, and, in the latter stages, with ascites and pregnancy.

Tubercles of the mesentery, or of the peritoneum, where they have attained the size of a large apple, may certainly at first be mistaken for a disease of the ovary, and their true nature can only be determined by the slowness of their growth, and their being generally unaccompanied with pain. The author has seen a few cases where such tubercles had no increase of bulk for from fourteen to twenty years, and where their true nature was not ascertained till after death.

That scirrhusity of the pylorus could be mistaken for an enlargement of the ovary, may appear incredible to those who acquire

their knowledge of diseases from reading books. But the author met, several years ago, with one case which strongly illustrates this point; and a few other cases have been communicated to him by professional friends. He was requested by an old pupil to visit a poor woman, the wife of an operative blacksmith, who was supposed to be in great danger, in consequence of an extra uterine conception. In proceeding to the dwelling of the patient, he was assured that the head and chest of the infant could be plainly distinguished, but that the limbs could not be felt. On examination, he found a large indurated tumour, very much of the shape which had been described, situated in the right iliac region, and reaching as low as the groin. It was exquisitely painful to the touch, and the poor woman appeared in the last stage of marasmus. He had no doubt that it was a diseased ovary, and that the sufferings of the patient admitted only of palliatives.

Death relieved the poor woman in the course of a few days; and it was then found, to the great surprise of those assembled to witness the dissection, that the disease was scirrhus of the pylorus of great magnitude, and which had actually fallen down as low as the groin.

Reasoning on the subject could never lead one to suppose that scirrhus of the caput cœcum coli could be mistaken for enlargement of the ovary. Yet a case of that kind fell under the author's notice within these twenty years. The patient had been attended for some time by two most experienced general practitioners. She was between the fortieth and fiftieth year of her age, and had been for several months in bad health. When the author was consulted, she laboured under all the ordinary symptoms of a broken constitution, with a very considerable degree of increased action of the heart and arteries, and great prostration of strength. When the state of the abdomen was examined, the only deviation from the ordinary structure which could be detected was a spheroidal indurated tumour about double the size of an orange, situated on the right side of the lower part of the belly, quite indolent, and not only movable, but communicating the feeling, on being pressed upwards, of drawing up the vagina—a feeling which the author had at that time supposed to indicate generally an enlargement of the ovary.

Taking all the circumstances into consideration, the author's opinion certainly was, that there was an enlargement of the right ovary, and that the constitutional symptoms were occasioned by the mercurial medicines which she had been taking for several weeks. He therefore advised the ordinary means for the alleviation of symptoms which supervene to the use of mercury; but the patient sunk in the course of a short time. The caput cœcum coli was found to be the seat of the disease. Its coats were greatly thickened and decidedly scirrhous. In this case the author was assured by the medical gentlemen in previous attendance, that there never had been a symptom indicating any disease of the gut.

A case where an accumulation of indurated fæces in the caput

cæcum coli might have been mistaken for enlargement of the ovary, occurred, within these few years, to his friend, Dr. John Moir, who requested the author to visit the poor woman. He found her suffering from a circumscribed movable indolent enlargement of the right side, communicating the feeling of what is generally characteristic of enlarged ovary. As the woman was in the lower ranks of life, she had had no leisure to attend to the first approaches of indisposition, and therefore could not give a distinct account of the progress of her disease. She said that she had been under the care of some medical men, who had twice cupped her on the seat of the swelling. It was therefore with some hesitation that the author pronounced it a case of accumulated fæces. The hint was followed up by Dr. Moir, with his usual assiduity and zeal, and he had the satisfaction of seeing the patient restored to perfect health in three or four weeks.

Having thus stated the difficulty of distinguishing enlargement of the ovary in the early stages of the disease, it will naturally be expected that the author should point out the means by which such mistakes may be avoided; but he regrets to say, that he can give no general rules by which this most desirable object may be accomplished. At one period of his life he certainly believed, as already mentioned, that he had discovered a diagnostic mark, viz., that whenever a circumscribed indolent movable tumour within the abdomen, on being pressed upwards (the patient lying in the horizontal posture), occasioned the sensation of the drawing up of the vagina, the disease was ovarian. But he has now seen so many exceptions to this rule, that he has no longer any confidence in it. He is convinced that it is seldom possible to distinguish the early progress of enlarged ovary.

However incredible it may appear, there can be no doubt that, in the advanced stages of enlargement of the ovary, the disease has been confounded with ascites and with pregnancy. It might be easy to account for such mistakes in cases of the lower ranks, for such patients cannot be expected to give an accurate or faithful account of the progress of the symptoms. But many instances have fallen under the author's notice, where individuals of the better ranks have had such complications of symptoms, and have given such a confused account of their disease, that general practitioners of the highest respectability have been deceived.

Ascites is certainly, in by far the majority of cases, preceded by such symptoms of indisposition, and accompanied by such marks of impaired health, that an experienced practitioner can ascertain the disease almost by the glance of the eye.

But it now and then happens, that after enlargement of the ovary has been advancing insidiously for a considerable length of time, it suddenly increases in size, and by its injurious pressure upon the abdominal viscera, it occasions various modifications of dyspepsia, and in some cases even a slight degree of jaundice. This complication cannot fail to perplex the practitioner.

For many years of his professional life the author believed that, where there was distinct fluctuation within the abdomen, he could always distinguish dropsy of the ovary in this way. Placing the patient upon her back quite horizontally, he considered that if he could feel the fluctuation at the lowest possible point on each side of the belly, the case must be ascites; for in dropsy of the ovary the intestines must be interposed (as in the case of the gravid uterus) between the seat of the disease and the spine, and, consequently, the fluctuation could not reach the most dependent part of the cavity.

Further experience, however, has led him to doubt the accuracy of this test, for he has seen several cases which convince him that no reliance can be placed upon it as an invariable rule. He has been, therefore, compelled to adopt a method of distinguishing such cases, which unequivocally determines the true nature of the case. It occurred to him, that whenever there is such a distension of the abdomen, with evident fluctuation, as to render it doubtful whether the disease be ascites or dropsy of the ovary, the operation of tapping might be useful, and could not be hurtful, and that the result of the operation must decide the nature of the case. The peculiar appearance of the fluid, which in dropsy of the ovary is commonly amber coloured, and of the consistence of melted calf's-foot jelly, but more particularly the collapsed sac, distinctly perceivable on the day after tapping, like the contracted uterus on the day after delivery, afford certain evidence of dropsy of the ovary.¹

Unmarried women who have unfortunately gone astray, naturally practise every means of deceiving the practitioner, and it requires considerable caution to guard against such impostures. Unless a careful examination of the enlargement be instituted, no medical man is warranted in giving an opinion from the report of the patient.

Cases, however, occasionally occur, which must tend to embarrass a practitioner. Such are cases where there is a certainty or presumption of an enlarged ovary, and where there are, at the same time, symptoms of pregnancy. It has been already stated, that disease of one ovary does not prevent conception; and therefore, in every case where there is a chance of the patient being pregnant while labouring under a disease of the ovary, it is the duty of the practitioner to ascertain, by examination, the state of

¹ For above thirty years, the author was accustomed to mention, in lecturing, that the appearance and qualities of the fluid drawn off in the operation of tapping the ovarium, were very different in different cases; that, in the greater number of cases, the fluid was amber coloured and gelatinous, with occasionally fatty follicles; that, now and then, it was dark coloured, like port-wine; and that, in a few cases, he had seen it as black as ink. He added, that he had repeatedly known, in the same patient, cysts containing those different fluids, and that he had never seen in any diseased ovary the fluid of a serous nature similar to that in ascites. He therefore believes that he was the first to describe the curious disease called, by the French, *Melanose*.

the uterus. If there be enlargement of the ovary, independent of pregnancy, the uterus will be found forced so low down into the vagina, that its actual condition cannot be misunderstood.

In some cases to which the author has been called, the practitioners have trusted to the state of the menstrual discharge; but experience has convinced him that no reliance can be placed on that criterion. In many cases of diseased ovary, the catamenia have been quite regular, while in others they have been suppressed.

The prognosis in cases of diseased ovary is more difficultly formed than in almost any other organic disease. Indeed, it is impossible in any given case to foretell the probable progress. Out of a great number of cases which have fallen under the author's observation, he selects the following, in illustration of this general proposition.

An unmarried lady, in the thirty-sixth year of her age, consulted the author's father on the safety of her accepting an offer of marriage, considering that she had a circumscribed tumour on the left side of the belly, a little larger than a new-born infant's head. Her general health was excellent. This lady married, but had no family. At the distance of forty-two years from her marriage, the author was called to attend her, in consequence of a febrile affection, and he surprised her by mentioning the enlargement. She then stated that it had remained stationary, and had never occasioned her any inconvenience. He actually found it to be exactly of the same size as his father had described.

A married lady who had had a family, was found, at the decline of life, to have dropsical ovarium to such an extent that there was a perceptible fluctuation; but her general health continued good, and for several years she suffered no inconvenience from the enlargement. At last, however, in consequence of a severe catarrh, the ovarian sac suddenly burst during a violent fit of coughing, and she sunk in a few hours.

Another married lady, after having had one child, never again conceived, but continued for many years to enjoy good health; at last she felt a deep seated pain in the left side, and, on examination, a circumscribed tumour, about the size of a child's head, with an unequal surface, and painful to the touch, was perceived. The usual evidences of broken health quickly followed, and the patient was pronounced, by the late Dr. Munro and the author's father, to be in imminent danger.

Without any apparent cause, the alarming symptoms gradually abated, and for above fourteen years this lady enjoyed general good health.

Gradually, however, the pain in the left side returned, febrile symptoms eventually supervened, and when the author was called in, he found her case, as he supposed, desperate. She was delirious, with almost incessant vomiting; she had burning skin, with a pulse above an hundred and forty; she occasionally screamed out, and, during any temporary sleep, had constant moaning; and the abdomen was much distended, and exquisitely tender to the touch.

These symptoms, contrary to all expectation, abated so much that the patient was brought to Edinburgh from a considerable distance. Four months afterwards, the operation of tapping was had recourse to, and two wash-hand basins full of purulent matter were drawn off. This patient dragged on a miserable existence for fifteen months longer.

Two sisters, unmarried ladies, between twenty and thirty years of age, consulted a respectable medical practitioner, in consequence of a circumscribed enlargement upon one side of the belly. In the elder sister, it was found that the enlargement was smooth, of the size of an infant's head, and indolent. In the other sister, the enlargement was unequal on its surface, and was painful on pressure. In both sisters the enlargement gradually increased, so as to produce an unseemly size of the belly. In the elder sister no inconvenience resulted, and her general health continued for many years to be unimpaired. The younger sister, on the other hand, from the time that the enlargement was discovered, was a constant invalid. For many years she was scarcely a dozen times in the open air, and that only during the summer season.

At last, after this disease had been ascertained to have existed for above twenty years, the author was called to see those patients. In both cases there was a prodigious enlargement of the abdomen, with universal œdema; but in the elder sister there was no pain upon pressure, while in the younger sister the slightest touch of the distended parts gave pain. The elder sister survived the other by some weeks; but, in both instances, all attempt at the horizontal posture, for many days before death, threatened suffocation, and it became necessary, in order to relieve the breathing, to direct scarifications of the lower extremities.

About twenty-seven years ago, an unmarried lady, in the fortieth year of her age, came to Edinburgh, from England, for a consultation, and the late Dr. Munro and the author attended. The symptoms of her disease were most complicated, but, after a minute and anxious investigation, it was believed that her complaints arose from two different causes not necessarily connected, viz., disordered function of the stomach and bowels, and enlargement of the left ovary to the size of the gravid uterus, at the completion of seven calendar months. The means recommended were calculated, in the first place, to relieve the affections of the stomach and bowels, and, in the second place, to retard the progress of the enlargement of the ovary. The former object was very quickly attained, and the general health of the patient was restored.

After a lapse of twenty years, this lady came to Edinburgh on a pleasure excursion; and when she told the author that the enlargement had totally disappeared, but in so gradual a manner that she had been scarcely sensible of the change, his impression was, that she had been deceiving herself. On examining the state of the abdomen next morning, however, he ascertained that there were no remains whatever of the enlarged ovary.

Such is the discrepancy of symptoms, and the uncertainty of

progress in this disease, that it consists with the author's knowledge that several individuals continue to live, and to have a tolerable share of health, who had for many years been confined to the house, and in whom the enlargement of the abdomen had become oppressive. In some of those cases, this change took place so gradually that the patient could not account for her improved health. In a few cases, it followed the employment of some remedy, such as preparations of iodine, or some patent medicine. The author's impression has uniformly been, that in all such cases the enlargement of the ovary had spontaneously become stationary, and the parts on which it pressed had, by some process of nature, become accommodated to the pressure.

Any discussions upon the causes of this disease could lead to no satisfactory result, because they are so obscure as to elude all investigation. A very general opinion has been entertained by the profession, that a scrofulous habit predisposes to the disease. The author's experience has not confirmed this opinion; but, in making this observation, he does not mean to assert that those who have a scrofulous diathesis are not more liable to internal organic diseases than those who have no such tendency. He can declare that he has seen many cases of enlarged ovary where there was not the slightest vestige of a predisposition to scrofula. As to the notion that the disease may be produced by injuries during labour, the author has never had the slightest evidence of any such cause.

In modern times, the most respectable part of the profession have considered diseases of the ovary to be incurable. Professor Burns expressly says (eighth edition of his *Principles of Midwifery*, page 141), "I wish most distinctly to state my conviction that, beyond the object of palliating symptoms, the medical art can at present not extend, and it argues, in so far as our skill, at least as yet, goes, a most unsupported confidence in the power of physic to propose more." Professor Davis says (page 767), "The author cannot pretend to recommend any medicine possessing an adequate curative power over ovarian dropsy."

That there are many cases of enlargement of the ovary, which admit only of palliative treatment, the author readily concedes; but he can prove by many living witnesses, that cases now and then occur where the disease is curable, not merely in its early stage, but after it has attained such a magnitude as to require the operation of tapping.

Sixteen years have now elapsed since the author, after pointing out the inutility and perhaps the danger of courses of mercury in such cases, ventured to offer the following observations on the treatment of enlargement of the ovary.¹

"From the inutility or injurious tendency of the various means commonly employed in cases of enlarged ovarium, the author for many years confined his views in the treatment of that disease to

¹ Observations on the Use and Abuse of Mercurial Medicines in various diseases, by Dr. James Hamilton, page 200.

promoting the general health, and to palliating distressing symptoms ; and as he not unfrequently saw instances where the local affection, after a certain process, became stationary, and ceased to give any uneasiness, he supposed that no other resource could be safely relied on.

“ Within these five years, however, he was induced, by particular circumstances, to make some experiments, for the purpose of determining whether the enlargements in question could possibly be removed ; and in doing so, he did not neglect the necessary precaution of avoiding every thing which could at all injure the general health.

“ Adverting to the effects of percussion and of pressure in chronic rheumatism, and knowing the influence of the continued use of the muriate of lime, in indolent glandular swellings, he was led to the trial of those several means, as being at any rate perfectly safe. He advised, therefore, that moderate and equable pressure of the abdomen should be made by means of a suitable bandage ; that the enlarged part should be subjected twice a day to gentle percussion, and that a course of small doses of muriate of lime should be continued for at least several months. Where pain or tenderness was experienced on the ovary being pressed upon, he recommended, in addition to the above means, the daily use of the warm bath.

“ This plan of treatment has been much more successful than he had anticipated. In seven cases in which it has been tried, the enlargement has so completely subsided that it is no longer tangible. There could be no mistake in the majority of those cases, not only because the size of the diseased ovary was very considerable, the fluctuation was distinct, and all the ordinary characteristics were well marked, but also because the nature of the affection had been previously ascertained by some of the most experienced practitioners in London.

“ In the first three cases, the author considered that there might be some accidental coincidence independent of the remedies employed, and therefore he did not venture to allude to them, even in lecturing, being always unwilling to give any hints which might lead to delusive speculations in the practice of physic. But the fortunate issue of four additional cases entitles him to presume that the above means of cure bid fair to prove extensively useful.

“ He may venture thus far, he trusts, without the imputation of holding out ill-founded hopes on this subject ; but, to prevent all risk of misleading, he thinks it right to specify explicitly, that the difficulty of distinguishing the presence of hydatids, must, in every individual case, render the efficacy of the practice doubtful, even although further experience should establish the fact, that where the effusion is within the proper coat of the ovary, this method of cure invariably succeeds.

“ Previous to the diminution of bulk in all the successful cases, it is proper to add, that the circumscribed enlargement of the ovary has invariably become soft. This change was so remarkably obvious in the first of the successful cases, that the indentation of the

patient's finger upon it was similar to what occurs in anasarca, although it had been formerly quite incompressible. As the tumour extended as high as the right hypochondre, this important change was first perceived by the lady herself."

His experience since that time has fully confirmed the above remarks; having succeeded now, in a number of cases, in curing or retarding the disease, by the simple means above alluded to, viz. firm compression of the abdomen, percussion, the use of the warm bath, and a protracted course of the muriate of lime, together with the ordinary means for promoting general health.

This additional experience has also confirmed the objections which the author urged (*loco citato*, page 198), against the use of mercury.

But, for the information of the junior part of the profession, the author feels that he ought to enter into a more detailed account of the result of his experience in this disease, and he therefore offers the following remarks.

Firstly, In two, or perhaps three, cases of a circumscribed tumour not larger than an orange, upon one side of the lower part of the abdomen, he has known the enlargement disappear under a course of mercury, but there was no evidence that the disease was seated in the ovary, and his own impression certainly at the time was, that it could not be so.

Secondly, In the cases where, under the treatment described (*loco citato*, page 204), the enlargement disappeared, that curious softening, occasioning pitting on pressure, occurred,¹ which he could not explain according to his view at that time, having supposed that he had perceived fluctuation in the enlargement. For, if the enlargement had been either a collection of interstitial fluid within the coat of the ovarium or an accumulation of gelatinous fluid in a cyst, the absorption of the fluid must have been attended with a corresponding shrinking of the sac in which it was contained.

But a case occurred some time after those alluded to, which leads the author to believe that he had mistaken a parabysma for an accumulation of fluid. The patient, a married lady, twenty-five years of age, had a chronic enlargement of the uterus, to such an extent that it equaled the size of the gravid uterus at the end of the fifth month at least. In this case, the first evidence of the mode of treatment becoming efficacious, was the softening and pitting of the tumour. Within a month from that date, the uterus was reduced to its natural small size.²

Thirdly, He has seen many cases where every variety of diuretic medicines had been administered with great perseverance, without the slightest influence upon the disease.

¹ It consists with the author's knowledge, that the lady whose case is alluded to (page 204, *loco citato*), still enjoys good health, and has no vestige whatever of the disease. She had two living children after the disappearance of the ovarian affection.

² This patient had for a year been under the care of his friend, Dr. Merri-man of London.

Fourthly, Within these sixteen years he has been called to a few cases, where, after the enlargement had attained the size of an ordinary melon, acute pain in the diseased part took place, accompanied with alarming symptomatic fever, and where, during the employment of the means necessary to alleviate those symptoms, the enlargement subsided, and eventually disappeared.

Fifthly, Experience has now therefore encouraged him in many cases to expect either to reduce the enlargement altogether, or to prevent its augmentation, and in all cases where the patient's health has not been irreparably injured, he has found it practicable to palliate the symptoms.

He now proceeds, therefore, to explain the treatment which he has been led to adopt in cases of diseased ovary.

When the enlargement does not exceed the size of an infant's head, occasioning no pain upon pressure, and being unaccompanied with any derangement of the general health, the advice which he gives is, to take a six or eight weeks' course of Harrowgate water, to use the warm bath every second day, and to have the abdomen firmly compressed by a suitable roller. Several individuals can be appealed to as having received so much benefit from those means, that the enlargement has never increased, and has never occasioned any inconvenience.

In cases of a similar enlargement, where acute pain and symptomatic fever arise, he premises blood-letting by means of the lancet, after which he directs the continued application of a cataplasm, composed of one part of the powdered leaves of the conium maculatum, and two or three parts of linseed meal, with brisk purgatives and antimonial diaphoretics.

A similar treatment, modified according to circumstances, he has found useful in those cases of the same degree of enlargement where there is a deep seated pain, aggravated by pressure, with symptoms of deranged health, but without excitement of the arterial system. In such cases, he holds the subtraction of blood to be unnecessary.

When the enlargement exceeds the dimensions of the head of an adult, if no fluctuation can be perceived, he concludes that it is either a parabysma or a collection of hydatids, and for the purpose of preventing the increase, he recommends the internal use of the conium maculatum, beginning with four grains of the powdered leaves, combined with a few grains of the powdered root of columbo three times a day, increasing the dose as the stomach can bear it, and the fomentation of the abdomen for an hour, evening and morning, with a strong decoction of groundsel, the senecio vulgaris.

About the beginning of last century, this plant was held in high estimation by the most intelligent part of the profession, as furnishing a most powerful means for checking the growth both of tubercles and parabysmata. By what caprice it has fallen into disuse it is unnecessary to enquire. But the author can, from not a little experience, now assert, that it has a powerful influence both upon the nervous and the vascular system. He is aware that if he were to state the fact, that in many parts of Ireland and the west of

Scotland, this herb is extensively employed as an external application by the poor, many practitioners might disregard such an evidence of its efficacy, but he must confess that it was this consideration which induced him to make trial of the drug.

Fomentations of groundsel are made by slowly boiling two of the ordinary sized plants, previously well washed, in three quarts of water for one hour. The liquor is then to be strained off. The plants to be selected are those which have not yet been in full flower.

But when the fluctuation can be distinctly perceived in a circumscribed tumour, even although it be considerably larger than the head of an adult, if there be no inequality of surface, and no pain upon pressure, the appropriate treatment is, firm compression of the abdomen—regular exercise in the open air, when the weather permits—percussion for half an hour, evening and morning, by means of the fingers, or of an instrument contrived for the purpose¹—the daily use of the warm bath, and a continued course for many months of a solution of the muriate of lime, together with such regulation of the diet and such attention to the state of the bowels as are calculated to promote the general health.

During bad weather, when the patient cannot safely take her usual exercise, the author has recommended, he thinks with great advantage, spinning on the ordinary sized spinning-wheel for two or three hours daily.

With respect to the bath, the heat of the water should be 98° of Fahrenheit's scale, and the patient should remain in it from ten minutes to a quarter of an hour.

That the muriate of lime may not injure the digestive functions, a small proportion of the tincture of columbo should be added. The formula recommended by the author, is one part of the tincture of columbo to seven parts of the solution of the muriate of lime, and of this the patient is directed to take a dram properly diluted twice a day.

In the more advanced degrees of the disease, where, along with distinct fluctuation, the bulk is so enormous as to make injurious pressure upon the respiratory or digestive organs, the operation of tapping becomes an expedient of necessity. But there are also cases where this operation may be employed as a means of retarding the progress of the disease. It requires, however, much practical judgment to discriminate such cases, and the author's experience enables him to suggest the following precautions upon the subject.

Firstly, If the symptoms of the case are so equivocal that it is doubtful whether they arise from ascites or ovarian dropsy, tapping is justifiable, for it not only must tend to relieve the symptoms, but also to determine the true nature of the disease.

¹ To be had of Stevenson, cutler, opposite the Royal Infirmary of Edinburgh. This instrument consists of five balls imitating the points of the fingers, and enables the attendant to percuss the affected part without fatigue.

Secondly, When the age of the patient is above sixty, tapping should never be had recourse to as an operation of choice, because many individuals, according to the author's experience, have attained the age of from seventy-five to eighty without much inconvenience, notwithstanding the enlargement equaling the size of the gravid uterus at the full period of utero gestation.

Thirdly, But when the age of the patient is between twenty and forty-five or fifty, tapping holds out the chance of allowing the resources of the constitution, assisted by medical treatment, to remove the complaint.

Several cases have fallen under the notice of the author, which entitle him to give this opinion ; but certainly the most remarkable is that of a lady, who had been considered by two of the most eminent general practitioners in this city (both now dead) to be labouring under ascites. After tapping, it was ascertained that the disease was dropsy of the ovarium. Within eight or nine months, it became again necessary to have recourse to the operation. Thirteen years have now elapsed since that time, and the lady continues in perfect health, without the slightest enlargement.

In this case, the treatment recommended, after the second operation, was a continued course of the muriate of lime, with a combination of the muriated tincture of iron, with firm compression of the abdomen, regular exercise on horseback when the weather permits, and spinning for two or three hours on the days on which she was confined within doors from the state of the weather.

Fourthly, If along with fluctuation there be evident hardness in any part of the circumscribed tumour, the operation of tapping is unsafe, and indeed may be most prejudicial.

One of the most remarkable cases, in illustration of this, which has fallen under the notice of the author, occurred within these few years. A most meritorious individual, unmarried, about the sixtieth year of her age, became conscious that she could not make the usual exertions in the management of her family, in consequence of an enlargement of the abdomen ; but until she had great difficulty in stooping, she did not apply for medical advice.

When the author saw her, along with her attending surgeon, he perceived a very distinct fluctuation ; and as the patient's general health was good, his impression was, that, by the removal of the fluid, the present inconvenience might be remedied, and the further progress of the disease be retarded.

Some days elapsed after this opinion before the patient made up her mind to submit to the operation. When she was put in a proper posture for that purpose, the author was a good deal staggered on perceiving a resisting hardness underneath the anterior part of the parietes of the abdomen, and, on feeling the fluctuation at the sides to be rather obscure. He therefore hesitated much respecting the propriety of the operation, and he expressed his doubts very candidly to the operator.

Notwithstanding this, the operation was proceeded with, but no more than an English pint of fluid was discharged. A probe was

introduced, on the supposition that there might be some fatty follicle stopping up the canula of the trocar; but as this did not produce any additional flow of fluid, the author took the liberty to assist the operator, and, to his surprise, he found the point of the canula firmly impacted in a resisting substance. The instrument was immediately withdrawn, and, in the course of twenty-four hours, two or three English pints of serous fluid were discharged from the wound.

This patient did not survive many months. The appearances on dissection explained the case. There was a fibrous parabysma of the ovarium, and, at the same time, a serous effusion into the cavity of the abdomen.

At one period of the author's professional life, he had a notion that the progress of ovarian dropsy, when uncomplicated with organic disease, might be treated like the hydrocele of the male, that is, by injecting some stimulant liquor into the cavity of the sac after the operation of tapping. In the year 1796, this experiment was tried on a poor woman residing in the street leading to the castle, by one of his most zealous and intelligent annual pupils, the late Dr. Sharp, of Cork. The experiment proved unsuccessful. The alarming symptoms produced by the local inflammation thus excited, resisted the most active and anxious treatment, and proved fatal within the week.

Another experiment for the cure of this disease occurred to the author. Finding that the accumulation of fluid was augmented, and its secretion accelerated according to the number of times the patient was tapped, of which there are some most remarkable cases upon record,¹ his project was to deviate from the ordinary practice, and to have recourse to tapping, before the sac should attain its former size, so as to favour the gradual diminution of the secreting surface. But a case which occurred about twenty years ago led him at once to relinquish this speculation.

The lady was in the fifty-second year of her age, and her general health was unimpaired. She had been many years married without having had a family. Having come to Edinburgh on a visit, and having accidentally mentioned to one of her relations, that she had had for some time an enlargement of the abdomen, she was persuaded to consult an eminent general practitioner. He sent for a surgeon, who pronounced the case to be encysted dropsy, and, influenced by their united opinion, this lady submitted to the operation of tapping. She did not survive a week. The author, though attending at the time one of her nearest relations, could not learn the symptoms which preceded her death. But he had occasion to know that, on the day previous to the operation, this lady had visited, without inconvenience, an old domestic of the family, whose residence was five floors up one of the ancient edifices of the old town of this city.

Another case occurred within these few years which has con-

¹ See London Medical Communications, vol. ii, page 124.

firmed the author in his opinion, that the operation of tapping is not safe till the sac has acquired a certain degree of distension. When he was called to this patient, who was in the forty-second year of her age, and the mother of one child, he learned, that for many months she had been harassed with almost incessant cough, and that gradually a great enlargement of the abdomen had taken place, in so much that, for some weeks, every exertion in moving had been accompanied with breathlessness. He found a very distinct fluctuation, and recommended immediate recourse to tapping. About twelve English pints of ropy fluid were drawn off, and the patient's health was quickly renovated.

Four or five months after this, however, the swelling of the abdomen having returned, with distinct fluctuation, the lady insisted on being again tapped, in consequence of the great relief which she had formerly experienced, and to this her medical attendants consented with some hesitation.

After this patient was placed in the proper position for the operation, the author took the operator aside, and expressed his doubts of the safety of the operation, founded upon the inconsiderable increase of size relatively to what it had formerly been. The anxious desire of the patient herself, however, induced him to proceed. But the moment the trocar was introduced, she screamed out that she had excruciating pain. Not more than half the quantity formerly drawn off was discharged. The pain increased, accompanied by incessant vomiting and ardent fever, and all the ordinary symptoms of peritonitis, and notwithstanding the most active measures, no alleviation of symptoms took place, and the patient sank within six or seven days. To the surprise of the medical attendants, it was found, after death, that the inflammation had been confined exclusively to the internal surface of the sac, and that the peritoneum was perfectly sound.

In America, and some other parts of the world, it has been alleged that, in the early stages of enlarged ovary, extirpation by means of a surgical operation has been safely and successfully practised. But against this expedient the author has been always accustomed to urge the following objections.

Firstly, It is extremely difficult, as has been already shown, to distinguish enlargement of the ovary in its early stages; and it is still more difficult to foretell the progress of such enlargement. Any operation might, therefore, be useless or unnecessary—useless if there be no disease, and unnecessary if the disease be in a stationary condition.

Secondly, There is always a risk, in cases of enlarged ovary, that there be a complication of organic disease, or that morbid adhesions may have formed, connecting the disease with other parts.

Thirdly, As no prudent practitioner would think of operating unless the patient's health suffered, or seemed to suffer, from the disease, there must, in every such case, be the hazard of some malignant affection existing which no operation could remedy.

To his great surprise, an old pupil, Mr. Lizars, the professor of surgery of the Edinburgh Royal College of Surgeons, has enabled him to establish the validity of those objections upon grounds which are incontrovertible, and he considers that the public, as well as the profession, are under great obligations to the professor for having done so. Since the operation has proved unsuccessful under his dexterous hands, it is to be presumed that no British surgeon, in future, will venture upon such an experiment.

According to Professor Lizar's printed account, he undertook the excision of the ovary in four cases, and the results are thus described by himself.

1. "Wednesday, 24th October, 1823, was the day appointed for the operation," &c. He commenced the operation "by making a longitudinal incision, parallel with, and on the left side of the linea alba, about two inches from the ensiform cartilage to the crista of the os pubis, through the skin and cellular substance, when the peritoneum appeared, the recti muscles being separated by the distension consequent on the present disease and former pregnancy." Having then "made a small incision through the peritoneum," he made "the internal to correspond with the external incision," and then proceeded to examine the state of the tumour, "*when, to his astonishment, he could find none.*"—page 7, line 36.¹

No operation could more unequivocally establish his first objection to the excision of the ovary.

2. Professor Lizars' second operation was performed on Sunday, 27th February, 1825. He cut down from the ensiform cartilage to the symphysis pubis. He found one ovary "occupying the greater portion of the abdomen," and resembling "the uterus in the eighth or ninth month of gestation." He tied a ligature round its pedicle, and then cut it out. He now found that the other ovary was increased to "nearly the fourth part of the one removed, and was adhering on the right side of the parietes of the pelvis, and to the uterus, but comparatively free on the left side." While examining this, the gentlemen around him begged him to desist, in which he concurred, "conceiving that, as the uterus was elevated above the brim of the pelvis, and the ovary not tied down by adhesions to the bottom of the pelvis, there might be hopes of its rising after the other had been detached, and that it might be extirpated afterwards." The professor's account of this case terminates on the 9th of May, being ten weeks after the operation, and the conclusion of his report is in these words:—"She is now able again to get out of bed, and take nourishing diet. The ligature still remains, in

¹ Since Professor Lizars has stated, that, before having recourse to the operation, he "deemed it his duty to have the opinion of the principal practitioners of this city; that "it was agreed by all that there was a disease of one or both ovaries;" and that the patient "had been twice tapped for dropsy of the left ovary, the result of a former consultation of some of the ablest medical men in this city;" it is incumbent upon the author to declare publicly that, according to his sincere belief, he never saw this patient.

consequence, I imagine, of having transfixed the pedicle; it excites a little purulent discharge."

3. His third operation was performed upon the 22d March, 1825, and it so strongly corroborates the author's second objection to the operation that he feels it his duty to give Professor Lizars' account somewhat in detail. "I commenced the operation by making an incision through the skin and adipose substance, from the sternum to the symphysis pubis, then through the muscles and peritoneum, near the sternum, so as to get at once into the abdominal cavity; but the tumour approached so near the sternum that I could not accomplish this, so that I cut through the tendons of the external oblique, internal oblique, and rectus muscles, imagining I had got to the surface of the tumour, and was proceeding to separate the parietes from the tumour, when I observed my mistake. I accordingly deepened the incision through the posterior tendinous layer of the internal oblique and transversalis muscles, and arrived at the sac of the tumour; I then began to insulate the tumour, which was found adhering so strongly to the parietes of the abdomen, to the colon, and to the brim of the pelvis, that I despaired of being able to detach it; however, by dissecting at one time, and tearing cautiously with the fingers at another, I succeeded in insulating a large mass of a dark brown colour, weighing upwards of seven pounds, and, to my delight, having a pedicle only the thickness of the little finger, and between one and two inches in length. I now gave this enormous mass to my assistant, Mr. Macrae, passed a ligature round the pedicle, and tied it firmly, and then cut close to the tumour, securing three open mouthed vessels of the pedicle."

This poor woman's sufferings, from the time of the operation, appear, from Professor Lizars' account, to have been very severe, and continued fifty-three hours, when she sank.

4. The fourth operation performed by Professor Lizars, although it terminated favourably, in so far as the life of the poor woman was concerned, furnished an additional and conclusive illustration of the author's objection against this operation, and the circumstances merit the attention of all young practitioners. The professor's account of the operation is briefly the following.

"A longitudinal incision was made through the integuments, from the sternum to the pubes; at the sternal extremity the peritoneum was wounded, and one finger of the left hand was here introduced, then another, and the peritoneum laid open to the pubes; the same was done upwards to the sternum, where a multiplicity of convoluted vessels presented themselves of various magnitude, from the thickness of a finger to that of a crow's quill. At first I thought them the intestines, for they appeared extremely fleshy; then I imagined them the blood vessels of a placenta, which they still more resembled; indeed, such was their resemblance to the vessels of that organ, that the same idea struck one and all of the gentlemen present. On minute examination, however, they were found to be the blood-vessels of the omentum majus, enormously enlarged, running on the surface, and into the substance, of the

tumour, which appeared an enlarged ovarium. Finding that it was impracticable either to dissect these vessels from the surface of the tumour, or to secure them, in consequence of their great number, I abandoned the idea of extirpating the mass, in which decision I was supported by the gentlemen present. I therefore punctured with a large trocar and canula the centre of the tumour, but nothing flowed. I next made a small but deep incision with a scalpel, when the tumour appeared solid and cartilaginous, and a vessel bled a little. I lastly punctured the lower part of the tumour, being anxious to reduce its bulk, but only pure blood flowed."

The history of this case is extended only to a fortnight after the operation, at which time, the following is the report:—"The cough and irritation of the bladder have subsided; she sleeps soundly, is free of pain, eats heartily, sits up for an hour in the day in bed, and has motion in her bowels without the enema. She is allowed ordinary fare; the wound healing rapidly."

It was at one time imagined by the author, that in cases where the sac containing the fluid proves to be equable, it might be justifiable to draw it out and tie it; and he certainly, for several years, was anxious to have an opportunity of making the experiment, but in this wish he was disappointed, for in the only cases in which the experiment could have been warranted, the general health of the patients was so good, as to hold out the expectation of their recovering from their disease, or at least of their life being protracted for many years by the natural resources of their constitution.

The cases to which he alludes, were cases where there had been a large accumulation of fluid, and where, on the day after tapping, the collapsed sac, from which the fluid had been drawn off, resembled in size the uterus on the day after lying-in at the full time, and upon pressure was felt to be neither painful nor unequal on its surface.

From the event of the two cases already recorded, pages 116 and 117, he is now convinced that there would be much hazard from the operation he had projected, and he has no difficulty in avowing this retraction of his former opinion.

Three remedies for this disease, not hitherto adverted to, ought perhaps to be noticed, in order to prevent their being again adopted by the junior part of the profession.

The first of these, recommended by the celebrated anatomist and surgeon, Sheldon, was, keeping up a constant discharge from the surface of the abdomen, by means of blistering over the enlargement, and dressing with savine ointment. In a very few cases this practice seemed successful, but the best proof of its inefficacy is, that the practice was not continued after Mr. Sheldon's death. The probability is, that, in the cases where it seemed useful, the efforts of nature had arrested the progress of the disease.

For the relief of the parabysma of the ovarium, the second practice was suggested, viz., passing a seton through the tumour. No consideration could ever have induced the author to sanction such

a practice, and therefore he cannot give the result of his own experience on the subject. But he has had some communications from practitioners of high respectability, detailing the effect of this experiment, which strongly confirm those objections to the practice which every principle of common sense must suggest.

He deems it his duty, for the purpose of deterring speculative surgeons from adopting such a practice, to record the last case of this kind which has been reported to him.

An unmarried lady, about the fiftieth year of her age, residing in a country town, had had for some time a circumscribed indurated enlargement, about the size of the head of an adult, within the abdomen. Her general health was good, and she confessed that she suffered little annoyance from the enlargement. Having accidentally heard that a celebrated operative surgeon had been called to the neighbourhood, she requested his opinion on her case. He punctured the enlargement, but as no fluid issued, he passed a seton through the tumour. The patient died within the week, and as she was a most influential person in her native place, the lamentations for her untimely end can be better imagined than described.

Dr. Jenner, the celebrated discoverer of vaccination, imagined, in the latter years of his life, that the enlargement of the ovary, particularly when arising from hydatids, might be cured by keeping up for a succession of days or weeks a constant state of nausea, and he apparently founded his opinion upon the result of one or two cases, where individuals, in whom he supposed there was an enlarged ovary, had been cured apparently by the continued sickness incidental to a protracted sea voyage.

Two objections occur against this speculation of Dr. Jenner; for, in the first place, if there be no fluctuation, it is impossible to decide whether the disease be a fibrous parabysma, or a collection of hydatids; and, secondly, in some of the cases which the author has attended, where the patients were pregnant notwithstanding the diseased ovary, the breeding sickness (which so strongly resembles sea sickness) seemed to have no influence whatever upon the disease.

EVIDENCES OR SIGNS OF HUMAN PREGNANCY.

“In ordinary life, the existence of pregnancy is readily known and observed. The cases in which females have made mistakes on this point are few; and those few, from the fear of ridicule, are studiously concealed. We are hence led to form an opinion that nothing can be more readily known than this. But the case is altered when a medical witness is called upon to prove its existence on oath. He is then bound to weigh all the *possible causes*

that may produce these various symptoms, and he is to recollect that all of them have occasionally proved equivocal. *There is no one invariable sign of pregnancy*, and it is probably well that there is not."—Beck's *Elements of Medical Jurisprudence*, second edition, by Mr. Dunlop, page 81.

While the author admits that the observations above quoted correspond with the general belief of the profession, respecting the signs of pregnancy during the first four or five months of conception, he enters his protest against its application to those of the latter months, being convinced that there are unequivocal marks which enable the practitioner to decide the nature of the case at that period. But, besides, he considers himself entitled to allege, that the obscurity in which the symptoms of early pregnancy have been involved, has arisen chiefly from practical men not having investigated the subject with sufficient accuracy.

He undertakes therefore to prove, that both in the early and in the latter months of pregnancy, there are invariable signs marking that condition of the system.

I.—Signs during the early months of pregnancy.

When the author began practice, it was the popular belief that the movements of the infant were not perceived by the parent till the completion of four months and a half after conception, and hence the distinction into the early and latter months was strictly accurate, each comprehending the same portion of time. More than forty years have elapsed since he ascertained that, in general, quickening, as it is called, that is, the first sensation by the parent of the motion of the infant, takes place at the completion of four calendar months after conception. The knowledge of this fact is evidently of great importance in actual practice, but in a discussion on the signs of pregnancy, the popular opinion may be with advantage adopted.

Under this explanation, the author has no hesitation in asserting, that there are two circumstances which invariably attend pregnancy during the early months, viz.:—Suppression of the catamenia, and a perceptible change on the surface of the mammæ surrounding the nipple, and that all other symptoms are liable to so much variation in different individuals, and even in the same individual in different pregnancies, that they ought to be disregarded.

The invariable suppression of the catamenia has been utterly denied by many practitioners of the highest respectability, and it would not be difficult to collect a cloud of witnesses who state their positive knowledge of exceptions to this general law. Thus, Dr. Gooch, who so deservedly acquired great professional eminence, says, p. 202,—

"Many women assert that they have menstruated regularly during the early months of pregnancy; whether this is really menstruation, or a periodical hæmorrhage from partial separation of the ovum, is not the question, but whether, during the first months of pregnancy, there may not occur a monthly discharge of blood, which in period and duration so far resembles menstruation that

the patient is unable to distinguish it; and about this there can be no doubt."

By these remarks, there is a degree of credit given to popular prejudice to which it is by no means entitled, for the practitioner is not to be influenced by the suppositions of the patient, but to ascertain, by minute enquiry, the precise nature of the case, and where irregular discharges happen during the early months of pregnancy, the fallacy of the patient's opinion of the circumstances, if carefully investigated, can in general be detected.

That in some individuals a flow of blood is directed to the uterine arteries during the first months of pregnancy exactly at the regular periods of menstruation, indicated by a bloody discharge per vaginam, has been often alleged, but it does not consist with the experience of the author, that there ever was, strictly speaking, such an occurrence. He has known a slight discharge in individuals of a relaxed habit about the usual period of menstruation, but he has invariably found marked discrepancies, distinguishing such appearances from the natural periodical discharge. Thus, there has been an irregularity in the date of the recurrence, (though perhaps to the extent only of a day or two,) the duration and the quantity of the discharge have been very different, there having been only a slight show for an hour or two in persons habitually subject to a copious flow of five or six days' duration, or there have been feelings preceding or accompanying the temporary appearance never before experienced.

It is not wonderful, that when the nature of menstruation and the changes in the uterus consequent on impregnation were little understood, irregular discharges during pregnancy were supposed to be really returns of menstruation; but it certainly might have been presumed, that, in the present state of knowledge respecting the economy of the uterine system, more correct notions should have been now entertained.

That the menstrual discharge proceeds from the internal surface of the uterus through the os uteri, and that from a short time after impregnation the *membrana decidua* lines the uterus, and that the cervix and os uteri are closely sealed up, are facts acknowledged by all modern anatomists and physiologists. The doubt, therefore, started by Dr. Gooch, relates to the facility or difficulty of distinguishing, in any given case, irregular discharges from the menstrual fluid. But, in the author's opinion, there are three circumstances which enable the practitioner to make this important distinction, viz., the period of recurrence, the duration, and the quality of the discharge; and therefore, in all doubtful cases, accurate information on those points ought to be obtained.

But while suppression of the catamenia invariably attends pregnancy, it is well known that it may take place independent of conception, for many circumstances may interrupt the course of that natural evacuation. When, however, suppression of the catamenia is followed by the change in the *mammæ* to be now described, there can be no doubt on the nature of the case.

Many practioners of established character, and many writers on medical jurisprudence, have alleged, that no dependence can be placed upon the change in the colour of the skin of the *mammæ* surrounding the nipple, technically called the *areola*, and it is not difficult to account for this skepticism, because the change alluded to is chiefly remarkable in a first pregnancy, and because it requires considerable practical acumen to distinguish it. Accordingly, Dr. Beck (page 76) calls it a "fallacious proof;" and Dr. Gooch has stated, that "in very fair women, with light hair and eyes, the discoloration of the areola is often so slight that it is difficult to perceive; and in brunettes, who have already borne children, the areola remains dark ever afterwards, so that this ceases to be a guide in all subsequent pregnancies." But these remarks of Dr. Gooch are not founded upon accurate observation.

In fair women, previous to impregnation, there is no perceptible discoloration round the nipple excepting during menstruation, when a slightly marked circle of a bluish hue like milk and water, of various breadth in different individuals, commonly appears. When such women become pregnant, this circle is again apparent towards the end of the third month, and it gradually grows darker, so that after the fifth month, it is of a brownish tint.

But in women whose complexion is dark, the nipple in the unimpregnated state is surrounded by a brownish circle, which, after the third month of pregnancy, gradually becomes darker, so as to resemble old mahogany.

Swarthy women, on the other hand, have naturally, in the virgin state, a mahogany coloured areola, which, in the progress of pregnancy, is gradually converted into a black purple.

These are the cognisable changes upon the surface of the *mammæ* in consequence of impregnation in individuals who have a marked characteristic complexion; but as there is every shade of complexion in women of every rank, so there is a correspondent shade in the appearance of the areola. An additional difficulty in recognising this mark in actual practice is, that after a woman has once had a child, whatever her complexion may be, a discoloured circle surrounds the nipple. Thus, Dr. Gooch says,—“In brunettes who have already borne children, the areola remains dark ever afterwards.” But Dr. Gooch has expressed himself inaccurately upon this subject, for in persons of that complexion the areola, after delivery, becomes, relatively to what it had been during the latter months, brown, and not dark.

From the above description of the appearances on the surface of the *mammæ* surrounding the nipple, it is evident that, in brunettes, there may be, independent of pregnancy, as strongly marked an areola, in so far as colour is concerned, as in fair women during the latter months of pregnancy; and that in swarthy individuals there may be, in the virgin state, as dark an areola as in pregnant brunettes. There may also be a still further difficulty in the estimation of this mark, arising from the state of the *mammæ* during menstruation in women who have a very fair complexion. As to

the areola being formed in many of the complaints which resemble pregnancy, as Dr. Denman at one time alleged, it is unnecessary to make any other remark than that it is quite inconsistent with the observation of every modern practitioner.

Such being the varieties in the appearance of the *mammæ* in different individuals, the little confidence placed in them, as affording evidences of impregnation, by those who have not investigated the subject, can be readily understood. Accordingly, in the latest British publication on the Evidences of Pregnancy, the author, Dr. Evory Kennedy, says, page 52,—“ With regard to the areola, the conclusion we must arrive at is, that although it is not unworthy of our attention, taken with other symptoms, particularly in first pregnancy, yet, from the frequency of its occurrence in cases where pregnancy did not exist, and its absence where it did, without strong corroborating proofs, at least, we can place little confidence in it.”

The decided conviction of the author, however, is, that the areola connected with pregnancy can always be distinguished by an experienced eye. In the early years of his professional life, he trusted chiefly to the breadth of the discoloured ring, increasing as pregnancy advanced; and he still believes that, as a general rule, this holds good, though he has seen a few remarkable exceptions. The first of these occurred about ten years ago. The patient, whose complexion was neither fair nor that of a brunette, after having been some years married without any family, had been obstructed for some months, when the author was requested to give an opinion upon her case. He saw no discoloration of the *mammæ*, but he at once ascertained, not only the increased bulk of the uterus, but the unequivocal movement of the infant. On again examining the *mammæ*, he discovered a narrow brown ring, not exceeding the eighth of an inch in breadth, surrounding the nipple. The lady went to the full time, and produced a healthy child, but the areola never exceeded a quarter of an inch in breadth. He has since that time seen two or more similar cases.

For many years, the mark on which he has placed his principal reliance for distinguishing the true areola consequent upon impregnation, from the appearance of the surface of the *mamma* peculiar to the individual in the unimpregnated state, is a certain degree of turgescence on the surface of the discoloured ring, which becomes more and more distinct towards the latter end of pregnancy. In women who have had a family, and in whom there is a brown or dark areola while not pregnant, there is no sensible turgescence of the surface; but during pregnancy, the turgescence alluded to is, in most cases, evident to the naked eye, and, according to the author's experience, can in all cases be detected by a magnifying glass. The elevation of its outer edge can be thus seen distinctly. During menstruation, indeed, there is a certain degree of turgescence, but it proves of temporary duration only, and when the conception becomes blighted in the early months, the turgescence gradually disappears.

From the above remarks, the author again states, that the chief cognisable sign of pregnancy, during the early months, is the appearance of the surface of the mamma surrounding the nipple; and he considers it a matter of great practical importance to establish this fact. In the course of practice, many cases occur where the medical attendant, from respect to the feelings of the patient, dare not even hint at any of the symptoms of pregnancy, and, consequently, cannot propose any examination of the state of the abdomen; but the appearance of the mamma can be ascertained without exciting suspicion or giving offence.

II.—Signs of pregnancy during the latter months.

During the latter months, as the signs of pregnancy are cognisable to the senses, it is wonderful that they should be considered doubtful; and yet not only writers on medical jurisprudence, but also practitioners of midwifery of established character, have asserted that they are so. In the author's opinion, the difficulties and doubts upon this subject can be readily cleared up.

The chief evidences of pregnancy in the latter months, generally noticed, are progressive increase of enlargement of the belly—distinct sensation of the occasional movements of the infant—and secretion of milk in the mammæ; of these, the first and last are fallacious, for few women ever supposed themselves pregnant, in whom both circumstances did not concur. But the movements of the infant being independent of the control of the patient, can always be distinguished by an attentive practitioner, and in proportion as pregnancy advances, the facility of this detection increases.

Those who have read the cases of Johanna Southcott, and other individuals, who, although labouring under visceral diseases of the abdomen, were pronounced to be with quick child by respectable practitioners, may question the correctness of this remark.

It seems probable that the mistakes of this description have arisen principally from inattention to the fact, that different sensations are communicated by the movements of the infant at different periods of pregnancy. Thus, for the first month after quickening, if the hand be applied over the region of the uterus, the movement of the infant feels like that of a ball suddenly rebounding from the part on which it is thrown; but after another month, when the infant moves, a bulky body can be perceived as if starting, and during the last two months, besides the starting, the infant can be felt to move occasionally its several limbs.

Now, it consists with the experience of the author, that in some individuals the irritability of the abdominal muscles is such, that, if pressed upon by the points of the finger, some of their fibres are forced into momentary and involuntary contraction, and communicate very much the same sensation as the rebounding of the infant during the first month after quickening. The cause of deception may be discovered, by applying the palm of the hand, instead of the points of the fingers, to the surface of the belly; and a young practitioner should always recollect, that there can be no certainty of pregnancy, if what is supposed to be the movement of

the infant do not correspond with that which should take place at the alleged period of utero gestation. For example, if a woman supposes herself to be seven months pregnant, and declares that the movements of the infant resemble a strong pulsation, or the fluttering of a bird, there is a strong presumption that she has mistaken her condition, for at that period the movements of the infant communicate a very different sensation.

Cases, the author is well aware, are recorded, upon apparently good authority too, where it was supposed, that although pregnancy proceeded safely to the full period, the movements of the infant, though alive, had never been perceived by the parent, and could not be detected by the practitioner. Dr. Gooch expressly says, page 203, "There are cases, though rare, in which it (meaning the *fœtus*) has not moved during the whole of pregnancy, although it has been born alive and vigorous; of this I have known one case, and read of others." It is to be remarked, however, that Dr. Gooch does not say that in that instance he made any attempts to excite the movements of the infant. The author holds all those alleged cases to be the offspring of prejudice and credulity.

Perhaps, however, this erroneous opinion may have arisen, in some measure, from the fact, that where women are anxious to conceal their real state, they may, previous to the completion of the seventh month, so force into action the abdominal muscles, that the hand of the practitioner cannot be brought in contact with the uterus, and far less with its contents. Such is the dexterity of some individuals in these efforts, that they cannot be thrown off their guard, even by the unexpected application of the hand, previously soaked in cold water. But after the completion of the seventh month, the infant, if alive, can, by pressure, or by the application of cold, be made to move, notwithstanding the efforts of the parent.

The observations of Dr. Beck, and of Dr. Gooch, on the uncertainty of the marks of pregnancy, apply to those cases where, after conception, the *fœtus*, though blighted, is retained in utero. Under such circumstances, the suppression of the catamenia, and the breeding symptoms in the early months, convince the patient that she had conceived, and the discrepancies which follow the death of the embryo are overlooked or misrepresented, but the absence of progressive increase of size is always either avowed or obvious. The duty of the practitioner in such cases, is to ascertain whether the turgescence of the areola has subsided, whether the bulk of the uterus corresponds with the duration of obstruction, and whether there be any perceptible movement of the infant.

Complications of pregnancy, with various diseases, are occasionally met with, and require particular attention. The general rule should be, that wherever any disease, during the ordinary course of menstrual life, is attended with suppression of the catamenia, the state both of the *mammæ* and the uterus should be carefully examined, and no regard whatever should be paid to the prejudices of the patient or attendants. During the two last months, an

examination per vaginam, supposing the infant alive, can enable the practitioner to detect pregnancy, with whatever disease it may be complicated.

On the various visceral diseases, and other affections which may be mistaken for pregnancy, the author deems it unnecessary to offer any remarks. He can refer with confidence to Dr. Gooch's observations, page 216, *et seq.* He trusts that he has satisfactorily proved, that the state of the mammæ in the early months, and the movements of the infant in the latter months, afford unequivocal evidence of pregnancy.

Within these few years, a new test, professing to remove all doubts respecting pregnancy, has been published, what is called *auscultation*, and the author feels it incumbent on him to express his sentiments upon this subject.

Firstly, He admits that he has had no opportunity of verifying the allegations of Dr. Kergaradec, and others who have practised auscultation, for the plain reason, that he has not met with a case, during the last thirty years, where he could not ascertain pregnancy after the fifth month (where the infant continued to live), by the marks suggested in the preceding observations. Perhaps it may be urged, that, as a mere matter of curiosity, he ought to have investigated this point, and certainly, if he had had leisure for the gratification of curiosity, he should have done so.

Secondly, Throughout his professional life, the author has never adopted new modes of practice, where the established ones were found by experience to be successful.

Thirdly, In the better ranks, no prudent practitioner would have recourse to means calculated to excite alarm in the patient, and surely the ceremony of applying the stethoscope must be very formidable to susceptible females.

Fourthly, From the account of Dr. Evory Kennedy, and others, it requires a certain experienced tact to distinguish the two characteristics of pregnancy, which it is alleged auscultation discovers, viz., the *souffle* of the placenta, and the action of the fœtal heart.

Fifthly, There is such a discrepancy between the experience of those who have applied the stethoscope to ascertain the state of the gravid uterus, and that of the author, respecting the action of the heart of the fœtus in utero, that he cannot divest himself of the impression that there is some fallacy upon that point.

Almost half a century has elapsed since he remarked, that in infants who did not breathe upon birth, but in whom the pulsation in the cord continued, the action of the heart did not exceed sixty pulsations in the minute till breathing took place, when it became so frequent that it could not be numbered. This led him to take every opportunity (when he had occasion to introduce his hand into the uterus to extract the infant) to endeavour to ascertain the action of the fœtal heart before birth, and he has in no instance ever discovered it to be more frequent than in the still-born infant whose cord beats. This fact he has been long in the custom of stating in

his lectures, and it has been confirmed within these fifteen years incidentally by several foreign authors.

Now, it is certainly possible in the cases which have fallen under his observation, that the actions of the fœtal heart had been different from what they usually are, but it is not probable that he could have repeated his conviction of this slow action, year after year, as consistent with his experience, unless he had found it to be true.

Since the publication of Dr. Ivory Kennedy's book, the author's attention has been still more particularly directed to this subject, and as far as his own observations warrant, his opinion has been confirmed. In one case, the patient, when between five and six months pregnant, suddenly felt, in the act of having relief in her bowels, the liquor amnii discharged, and the umbilical cord of the infant forced down. For many hours no uterine contractions followed, but the pulsation in the cord continued, and the occasional movement of the infant was distinctly perceived on applying the hand to the abdomen. The author carefully counted the pulsations in the cord innumerable times, and they never exceeded sixty in the minute.

A lady at the full period of pregnancy, awakened from her sleep in consequence of a sharp pain, followed by the discharge of water, and the protrusion of the cord. Two hours elapsed before uterine contractions took place, and during that time the author had many opportunities of ascertaining that the pulsations in the cord did not exceed sixty. Within a month after that date, he was called to a similar case, where three hours intervened between the protrusion of the umbilical cord and the accession of uterine contractions, and during all that time the number of pulsations was the same as in the two former cases.

A very short time after this, a case occurred where, previous to the rupture of the membranes, it was ascertained that the navel-string preceded the presenting part. Its pulsations were repeatedly reckoned, and they did not exceed sixty in the minute. As the liquor amnii was in considerable quantity, and as the pulsations of the cord were reckoned during the intervals of the pains, the pressure of the uterus upon the infant could have no influence.

At the author's request, his friend and old pupil, Dr. Sidey, has, for a twelvemonth past, paid particular attention to the action of the heart of the infant, where breathing did not take place upon birth, but where it was eventually established, and the infant recovered. His report is, that in eight cases of that description, the action of the heart, previous to any effort of breathing, was from 56 to 60 pulsations in the minute.

Notwithstanding the conviction which the author's experience has involuntarily forced upon him, that there must be some fallacy in the observations of those who have supposed that the stethoscope can detect the pulsations of the fœtal heart, he was anxious to have Dr. Kennedy's experiments repeated; and he requested his friend, Dr. John Moir, on whose intelligence and veracity he can place the

most implicit reliance, to conduct those experiments. Dr. Moir's report is in substance the following.¹

In ten cases in the Edinburgh General Lying-In Hospital, during the months of August and September, 1833, where the patients were above seven months pregnant, he distinctly perceived the *bruit de souffle* synchronous with the woman's pulse, and also a pulsation which he considered to be that of the foetal heart, and which varied from 120 to 144 in the minute. In one case, when making the examination, the infant moved violently, and the pulsations were accelerated 12 or 14 in the minute.

Dr. Moir has, since that time, met with five cases requiring the operation of turning after the liquor amnii had been discharged. In one of those cases (October 27, 1833) an opiate was given previous to undertaking the operation, in consequence of which the uterine contractions were suspended. On applying the stethoscope during the suspension, the pulsations of the foetal heart were found to be 100 in the minute. But when the hand was introduced in order to perform the operation, uterine contractions recurred, and the heart of the infant was felt to beat 70. Again applying the stethoscope, without withdrawing the hand, the pulsations heard through it corresponded exactly with those which were felt in the heart, both being 80. Dr. Moir felt that every uterine contraction lessened the action of the foetal heart, but whenever the pains went off, that action was invariably accelerated.

In the second case (6th May, 1834), where the placenta was over the os uteri, the stethoscope indicated the number of pulsations of the foetal heart to be from 120 to 130; and on introducing the hand into the uterus, the pulsations were ascertained to be 124, but on a labour-pain taking place they were reduced to 90. When the pain ceased, the action gradually increased to its former frequency, and on the accession of every pain again lessened. This diminution of frequency was not uniform; the number at one time, and only once, fell to 80.

The very same results were observed in the next two cases. The urgency of the symptoms requiring instant delivery in the fifth case, prevented the application of the stethoscope.

These facts, testified by Dr. John Moir, confirm most satisfactorily Dr. Evory Kennedy's opinions on this subject, though they render the author's observations very inexplicable. In the cases of the prolapsus of the cord which he has witnessed since Dr. Kennedy's book fell under his notice, there were no uterine contractions for hours, and yet the pulsation in the cord did not exceed 60. In one of the cases, too, the liquor amnii was not discharged. In the cases where the author has had to perform the operation of turning for the last two years, the symptoms have been too urgent to afford him any leisure to feel accurately the state of the infant's heart while still in the womb.

It results, however, from the facts ascertained by Dr. Kergaradec,

¹ Dr. Moir's full communication is added by way of appendix.

Dr. Evory Kennedy, and Dr. John Moir, that after a certain period of pregnancy, the application of the stethoscope furnishes a satisfactory test ; but two questions arise on this subject. *First*, What is the earliest period of pregnancy which can be ascertained by the application of the stethoscope? And, *Secondly*, What are the doubtful cases of pregnancy which require such a test?

On the former of these questions, Dr. Kennedy says, page 82,—“ We have not succeeded in detecting the placental sound in any case, until after the second month from impregnation, but have frequently done so in the tenth, eleventh, and twelfth weeks.” But the doctor subsequently mentions a case, where “he distinctly detected the placental souffle, on the 15th August, 1829, and the patient was delivered of a living child on the 8th of March, 1830.”

Notwithstanding his high respect for the accuracy of observation of Dr. Evory Kennedy, the author has some doubts upon this case, founded upon the fact, that, previous to the third month of utero gestation, the structure of the placenta is quite different from what it is after that period. If the souffle perceived in the latter months be occasioned by the peculiar structure of the placenta at that time, it is not probable that it could be discovered before that structure is developed. But if what Dr. Kennedy calls the placental souffle, be the sound produced by the peculiar distribution of blood through the gravid uterus, the fact will not only be intelligible but important, as furnishing a diagnostic mark of pregnancy from the second month upwards.

With respect to the second question, viz., the cases in which the test of the stethoscope may be employed for detecting pregnancy, it must appear to every practitioner that they must be limited. Except in criminal cases, that is, where a woman condemned to death pleads pregnancy in arrest of judgment, it is seldom necessary to give a decided opinion sooner than the fifth month of pregnancy, after which time the appearance of the areola, the enlargement of the uterus, and the sensation of the motions of the infant, afford sufficient evidence of the nature of the case.

It must be admitted, indeed, that a general prejudice prevails, not only among the public, but among medical men of established character, that diseases occurring during pregnancy ought not to be treated in the ordinary manner. But this opinion has always appeared to the author to be most erroneous, and he has seen many deplorable instances of its fatal consequences. In acute diseases, the circumstance of the patient being pregnant ought to increase the activity of the practice, and in chronic diseases, palliative means cannot be injurious. In chronic affections of the liver, the author would not put the patient upon a course of mercury if pregnant, but he could suggest means, for the relief of the complaint at least, which could be adopted with safety.

But the cases in which practitioners are most commonly called to decide upon pregnancy, are two very opposite ones ; viz., where the woman has cherished the notion that she is in the family way ; and, secondly, where she is anxious to make it be believed that she

cannot be pregnant. In the former of those cases, the patient would readily submit to the use of the stethoscope, and the practitioner might be enabled to give a decided opinion, and would probably be required to do so. Those who have actually had charge of such cases, can alone understand the consequences of abruptly disappointing the hopes of patients, under the circumstances alluded to.

As to the latter description of cases, it would require more dexterous management than the author could pretend to exert, to induce any such persons to submit patiently to the application of the stethoscope. They make the utmost possible resistance, even to the examination of the state of the abdomen by means of the hand.

From these observations it is not to be inferred that the author is opposed to any improved method of ascertaining the existence of pregnancy. All that he wishes to put upon record, as his opinion, is, that admitting that by the application of the stethoscope to the surface of the abdomen of a pregnant woman a peculiar sound (called placental souffle) is heard, and that another sound, supposed to be that of the fœtal heart, is also perceived, he is convinced that few cases can occur in actual practice where this test can be required, or can be applied.

ON THE DURATION OF HUMAN PREGNANCY.

On this subject it is well known that there still prevails a great discrepancy of opinion among medical men of the first respectability, as was evinced a little time ago, in the testimony given before the house of peers in the case of the Gardner Peerage. This discrepancy seems to have arisen from two errors, viz., confounding the ordinary duration of pregnancy with the question of possible deviations, and confiding in the result of their own observations and experience without reference to, or confidence in, the recorded evidence of others.

To a person ignorant of the subject, these errors must appear very unaccountable, and yet the explanation is to be found in the obscurity of the subject, for the duration of human pregnancy can in general be ascertained only by inference; and hence it requires, in any given case, a combination of circumstantial evidence, which can be seldom satisfactorily established.

It seems to have been a popular notion of mankind, that women are conscious of the act of conceiving, and certainly all the laws of filiation proceeded upon in England, till lately, were founded upon this assumption. But nothing is more fallacious, as is now well known to the profession.¹

¹ *Vide* Heberden's Commentaries, page 207. To the facts there stated the author could add several instances which have fallen under his own knowledge.

In general, the first evidence of impregnation is the suppression of the catamenia, but in married women that cannot mark the precise day of conception, and it is only in the case of married women, that any reliance can be placed in the testimony of the patient. In the temperate climates of Europe, there are no more, upon the average, than twenty-three days between each menstrual period during which a woman can conceive, and consequently the mere suppression of the catamenia cannot mark the date of conception, because that event may have taken place on the very day after the last appearance, or on the day preceding the next expected appearance, and thus there may be a difference of twenty-two days.

In Great Britain, it is believed by most women that they are obstructed no more than nine periods, being thirty-six weeks, and consequently the ordinary duration of pregnancy, according to this calculation, is rather under nine calendar months, unless it be supposed that impregnation takes place on the very day after the cessation of the menstrual period, which would make thirty-nine weeks upon the average, being nine calendar months. Thus, reckoning any nine consecutive calendar months of the year, it will be found that seven out of twelve amount to two hundred and seventy-three days, making thirty-nine weeks—nine calendar months from the 1st of May, make two hundred and seventy-six days. But in the majority of cases, it is well known that labour comes on several days before the estimated return of the tenth period.

One method, therefore, and perhaps the most certain, of ascertaining the fact, whether human pregnancy is limited to a precise fraction of time, may be decided by this test. If a woman pass the tenth menstrual period, it may be legitimately inferred that she has exceeded the ordinary duration of pregnancy.

Dr. Young, the first efficient professor of midwifery in the University of Edinburgh, who deservedly attained a high character among his cotemporaries, declared in his lectures (according to his own holograph manuscript in the author's possession), that "he had had patients who went to the day of the tenth eruption, but never longer." Dr. Young was cut off by a sudden fit of apoplexy in the fifty-second year of his age. Had he lived longer, further experience would have convinced him that there are occasional exceptions to this rule. Accordingly, the author had one case where the patient exceeded the tenth menstrual period by twelve days, another by sixteen days, another by twenty-four days, and one exceeded the eleventh menstrual period by seven days.

There could be no fallacy in those cases, because the author had charge of those patients (in consequence of their cases being rather peculiar) from the time that they passed the first period.

An objection may be started against this test of pregnancy, which requires attention. It may be said that a woman may be accidentally obstructed for a period, and that just before the return of the catamenia should have taken place, from some natural improvement in her constitution, she had conceived. This is certainly a possible occurrence, but in the cases on which the author founds, it could

not be, for the date of the morning sickness, and the period of quickening, taken in conjunction with the fact that the uterine health of the individuals in question had been always quite regular, precluded the possibility of any mistake.

If there had been any doubt in the author's mind on this subject, it would have been completely removed by a case which fell under his care a few years ago. A very healthy individual married in the 37th year of her age, and was supposed to have immediately fallen with child. She exceeded by some time her reckoning, and produced a still-born infant, which her medical attendant supposed to have been a week dead. The same circumstances happened in her second pregnancy, and therefore, when pregnant for a third time, she was brought from a distance to be under the author's care. He was assured that in her two former pregnancies she had carried the infant to the eleventh menstrual period; and his impression was, that the uterus had ceased to furnish due nourishment to the infant for some time before labour had taken place. His advice, therefore, was, that if she should exceed the tenth menstrual period, labour should be artificially induced. This patient did exceed the tenth menstrual period, and when a week had elapsed labour was brought on, and she was safely delivered of a living infant. The same circumstances happened on two subsequent occasions, and this lady has three living children artificially brought into the world after she had passed the tenth menstrual period by one week.

Another method of reckoning the period of conception is, by the first sensation experienced by the patient of the movements of the infant. But this is a most fallacious mark, because this sensation occurs at different periods, not only in different women, but also in the same women in different pregnancies; and because the knowledge of this feeling can only be derived from the testimony of the woman herself, and her testimony is so little to be depended upon, generally speaking, that it is well known to the profession that no woman ever supposed herself pregnant, who did not believe that she was sensible of the movement of the infant.

One of the very respectable witnesses who gave their testimony before the house of lords in the case of the Gardner Peerage, declared, that when an individual quickens, as it is called, at a particular period in her first pregnancy, she continues to do so in every subsequent pregnancy.¹ But this gentleman has stated the exception, and not the general rule; for while some women feel the first movement of the infant invariably at a particular period, more than the majority experience a difference in different pregnancies.

The earliest period at which the author has known the movements of the infant perceived by the parent, has been the eleventh

¹ Dr. Conquest, *Medical Evidence in the case of the Gardner Peerage*, page 46, says,—“Quickening takes place from the sixteenth to the twentieth week, but when once a woman has quickened at a certain time, I believe, with scarcely an exception, she invariably quickens at the same period afterwards.”

week; and when the appearance of the embryo at various periods of utero gestation, as exhibited in anatomical collections (and as has been verified by the author in his own collection), is considered, it must appear surprising that its movements could be perceived at so early a period.

But although, considered singly, the date of the first sensation of the movement of the infant cannot be admitted as a proof of the period of conception, it may furnish a collateral evidence; and the author had occasion to witness three cases in one year, where he inferred from this symptom that the ordinary duration of pregnancy had been exceeded. Three patients who had had a family, and who had no motive whatever for deceiving, alleged that they had gone seven months with quick child; and, to the author's knowledge, they all exceeded the tenth menstrual period.

One of those cases was most remarkable. The patient, forty-nine years of age, was the mother of a large family; she had had no child for six years, and had been obstructed for four periods, which she attributed to the natural decline of life. On the 25th of August, while engaged at a card party, she suddenly felt herself with quick child, and the surprise had such an effect upon her as to be remarked by those at the card table. Her pregnancy progressed from that date, but she was not delivered till the 3d of April.

From the difficulty of ascertaining the moment of conception in the human subject, medical men have deemed it their duty to enquire, whether, in our domestic animals, pregnancy be limited to a precise period, and the result of the enquiry has been unequivocal evidence that it is not. Mons. Tessier, in a memoir read at a meeting of the Academie Royale des Sciences of Paris, 5th May, 1817, has given a very interesting account of those discrepancies. He stated, that of five hundred and sixty-five cows, there was a difference of eighty-one days between the earliest and the latest period of their calving. In two hundred and seventy-seven mares, there was a difference of ninety-seven days between the earliest and latest period. In sheep, nine hundred and twelve of which he had watched, there was a difference of fifteen days between the earliest and latest period.

Mons. Tessiers' observations were extended to asses, buffaloes, swine, and rabbits, and he found an equal discrepancy in all those animals. Even in the incubation of the eggs of the domestic fowl, there was a difference of from five to sixteen days.

The author's observations on the domestic animals have been confined to cows, and he has ascertained, by facts which are incontrovertible, that the more calves the cow has, the longer is the duration of her pregnancy. One cow in his father's possession exceeded the ordinary period by three weeks.

These facts afford to the physiologist satisfactory evidence that human pregnancy cannot be limited to a precise fraction of time, but the habits of lawyers lead them to reject all inference from analogy, and to insist upon direct testimony of the fact of the protraction of human pregnancy; and on this point the vague asser-

tions of medical authors furnish them, it must be admitted, with many plausible arguments in favour of the opinion that human pregnancy is limited to a precise period.

One of the first, perhaps, which might occur, would relate to the progressive size of the infant. If human pregnancy were continued beyond nine calendar months, it may be said the size of the infant would be too large to pass. But in reply to this, it might be urged, that the tardy development of the infant had occasioned the protraction of pregnancy.

That arguments founded upon the size of the infant cannot be admitted, is evident, because cases have occurred where the infant had attained a great size, without any deviation from the ordinary duration of pregnancy; and, on the other hand, there are well authenticated cases where the infant has been under the ordinary size, and yet there could have been no doubt of the protraction. The lady, who quickened upon the 25th of August, and was not delivered till the 3d of April, produced a small puny child.

In some cases, however, where the infant proved to be of an enormous size, the patients, while in the agonies of child birth, and while their conviction was that they could not be safely relieved, declared that they had passed the eleventh period.

A more plausible argument founded upon medical testimony is, that in cases of extra uterine conception, where the fœtus is situated in the ovary or Fallopian tube, &c., the expulsive action of the uterus takes place at the usual period of pregnancy, just as if the infant had been in the womb.

If this fact could be satisfactorily proved, it would certainly settle the question, but on looking into all the cases of extra uterine conception, which have been faithfully detailed by intelligent practitioners, it appears that this action of the uterus (which is the effort to throw off the decidua), has occurred at every different period of pregnancy.

Nothing can better illustrate the fallacy of medical testimony than this circumstance, as is clearly proved in Mr. Turnbull's publication, entitled, *Case of Extra Uterine Gestation of the Ventral Kind*. While he has repeated, page 10, the hackneyed observation, that "it is worthy of remark here, that the uterus took on a particular disposition for action about the usual period of parturition," he has himself explicitly stated, that the action alluded to happened at the end of the eighth month of the supposed pregnancy.

The medical witnesses examined before the house of lords, in the case of the Gardner Peerage, who declared their conviction that human pregnancy is limited to a precise period, professed to found their belief upon the result of their own observation and experience, totally disregarding the recorded facts of respectable authors; and the best illustration of the fallacy which had misled them, might have been elicited by examining them upon another physiological question, viz., the ordinary duration of human life. It is impossible to suppose that any of them could have declared his conviction, that the duration of human life is limited to a precise fraction of

time. It must have been admitted, that now and then individuals live to a great age. But it is not probable that this admission could, in the case of each witness, have been founded upon his own experience and observation, for few practitioners could declare that they had seen persons whose age exceeded an hundred years.

Another circumstance, equally conclusive, respecting the incorrectness of their opinion, seems to have escaped the notice of the lawyers. Unless the printed record of their testimony be incorrect, they stated twenty-eight days to intervene between the menstrual periods during which a woman can conceive.¹

Now the twenty-eight days thus specified, include the period, that is, women in Great Britain, who menstruate regularly, are unwell, as it is called, every twenty-eighth day, and as they cannot conceive during menstruation, and as that process generally lasts four or five days, there are only twenty-three or twenty-four days as the interval between each period during which conception can take place.

As already stated, however, the two great errors which the medical witnesses on that occasion committed, were, *first*, not drawing the line of distinction between the ordinary period of pregnancy, and the deviations which may occur; and, *secondly*, founding their belief upon their own limited observation and experience, disregarding the testimony of others.

It was the author's duty, from his earliest outset in professional life, to pay particular attention to this subject, and he can vouch for the following facts.

First, A married lady, of unexceptionable character, ceased to menstruate on the 1st of April. She distinctly perceived the movement of the infant on the 10th of August, and mentioned this to the author at the time. She was not delivered till the 25th of February.

Secondly, A respectable lady, the mother of a large family, was unwell for the last time, about the middle of January, and breeding symptoms were distinctly perceived about the beginning of March, at which time (viz. March 4,) her husband's private affairs led him to leave home for some months. But this lady was not delivered till the 6th December.

Thirdly, A lady was delivered of her first infant on the 13th of

¹ Sir Chas. M. Clarke is stated (page 8) to have said, "I should take the safest mode of giving the average reckoning, by counting the half of twenty-eight days, fourteen from the last period, and fourteen from the next expected one; and I should offer an opinion, that, in all probability, the effect might follow the cause at the end of forty weeks from that half of the interval, but I should know that it must take place at the end of forty weeks from the day upon which the last menstruation ceased, and before the day of expected menstruation."

Dr. Granville (page 30) is reported to have said, "I have known a case of two hundred and eighty-five days from the latest period of supposed impregnation, taking as the point of departure the last day of the month previous to the missed period, that is to say, twenty-eight or thirty days after the last menstruation."

June. Although she suckled her infant, she became unwell on the 1st of August. In September, her health declined so much that it was deemed necessary to give up nursing, the presumption being that she was in the family way. She was delivered upon the 28th June.

Fourthly, An unmarried lady consulted the author respecting the time at which she should disappear for the purpose of being confined secretly. She stated that she had menstruated in the beginning of November, and that she might have conceived upon the 5th of that month. She was not delivered till the 16th of September.

Fifthly, The author has been called in to several cases where married women of respectability had been a very unusual time in labour, who expressed their conviction, that they could never bear the infant in consequence of its extraordinary size, and that they could not survive the delivery, because they had exceeded the eleventh menstrual period. In those cases, from the unusual size of the infant, it became necessary to tear it away piece-meal, and, in more than one of those cases, the fears of the woman were realised, death having taken place a day or two after delivery.

Adding that of the patient where artificial delivery was three times successively induced after she had passed the tenth menstrual period by one week, the author considers himself warranted in declaring his solemn conviction, that he has met with at least twelve cases, in the course of practice, where there could not be the shadow of doubt of the protraction of human pregnancy beyond the ordinary period.

But he does not think himself entitled to give a decided opinion on the period to which the protraction may be extended. He is quite certain, however, that the term allowed by the code Napoleon, viz., three hundred days, is too limited, and he is inclined to regard ten calendar months, which he believes to be the established usage of the consistorial court of Scotland, as a good general rule, liable, as the Napoleon code has admitted, to exceptions, upon satisfactory evidence that menstruation had been obstructed for a certain period.

ON THE MANAGEMENT OF THE FIRST STAGE OF LABOUR.

That the act of human parturition is accompanied with pain and fatigue, at least in civilised states of society, has been universally acknowledged, and the sufferings of the woman have been in most languages metaphorically compared to those of travellers in countries where journeying was a painful and tedious, and hazardous undertaking.

Systematic writers on the practice of midwifery, adopting this

popular notion, have divided the several changes which take place during the birth of the infant into stages, and although there has been considerable diversity of opinion on the definition of those stages, or the combination of phenomena which should constitute those stages, it is evident that only one arrangement can be applicable to every case of labour. Before a pregnant woman can be safely delivered of her burden, the womb must be opened, the infant must be accommodated to the passages, and after its birth, the secundines must be separated and thrown off. By the first stage of labour, therefore is meant all that happens previous to the complete dilatation of the os uteri. The author was a very short space of time in practice when he saw reason to believe that the management of this stage had been much misunderstood by the profession.

He was first led to doubt the safety of the established practice, from reasoning upon the subject. He observed, that when the natural powers are alone trusted to, this stage is often greatly protracted, and he of course inferred that injurious effects must be the consequence. He considered, that upon the occurrence of every uterine contraction, there must be a certain influence on the action of the heart and arteries, and that if pain and sleeplessness were continued beyond a limited time, there must be an exhaustion of sensorial power. He concluded, therefore, that where the first stage of labour is not completed within a certain time, the strength of the patient must be proportionably lessened, the uterine action must be enfeebled, and the circulation of the blood must be disturbed.

But when he found that the most respectable practitioners, both British and foreign, had not adverted to those circumstances, and had expressly deprecated all interference with the first stage of labour, he necessarily felt diffident in promulgating this opinion, and therefore delayed doing so, till he could produce satisfactory evidence of its validity.

On this subject, Dr. Denman, whose works are deservedly of high authority among British practitioners, has thus expressed himself, vol. i., page 375:—"By regular returns of pain, or with the varieties before mentioned, with many others which it is impossible to enumerate, the os uteri becomes at length wholly dilated. Whether a short or long time be required for this purpose, it is the duty of the practitioner to abstain from interfering in this part of the process. It may sometimes be necessary to pretend to assist, with the intention of giving confidence to the patient, or composing her mind. But all artificial interposition contributes to retard the event so impatiently expected, by changing the nature of the irritation, and the action thereon depending, by inflaming the parts and rendering them less disposed to dilate; in short, by occasioning either present disorder or future disease. For these reasons we must be firm, and resolved to withstand the entreaties which the distress of the patient may urge her to make, as we must also the dictates of vehemence and ignorance. Others may be impatient, but we must possess ourselves and act upon principle. The event

will justify our conduct, and though there may be temporary dislike and blame, if we do what is right there will be permanent favour and reputation.

This opinion and practice seem to be adopted by the present eminent professor of midwifery in the London University, Dr. D. Davis, the latest English author. He says, page 963 of his *Principles and Practice of Obstetric Medicine*, that "the duty incident to the management of the first stage is ordinarily little more than that of watching the progress of the labour."

"A merely slow dilation of the orifice of the womb very rarely compromises the eventual safety of the case. Patience may perhaps be represented as the best natural remedy for this state of things."—page 969.

It was not till the year 1800, therefore, that the author ventured, in lecturing, to state as the result of his observation and experience for about fifteen years, that unless the first stage of labour (supposing that there are regular pains) be completed within twelve or fourteen hours from its real commencement, the following consequences may be dreaded.

Firstly, That the powers of the uterus may be inadequate to expel the infant with safety to its life, or to the future health of the parent.

Secondly, That after the birth of the infant, the uterus may contract irregularly, so as to occasion the retention of the placenta.

Thirdly, That after the expulsion of the placenta, the contractions of the uterus may be too feeble to prevent fatal hemorrhage. And,

Lastly, That, supposing the patient should escape all those untoward circumstances, febrile or inflammatory affections of a most dangerous nature may ensue from the previous protraction of pain and the irregular distribution of the blood.

Every year's experience since that time has furnished innumerable illustrations of the accuracy of this opinion. One of the most remarkable, and certainly the most interesting (for it excited the sympathy of the whole nation), was that of the Princess Charlotte. In her case, Dr. Denman's directions were implicitly followed, and all the world knows the deplorable consequences. The first stage of labour was allowed to go on from at least Monday night at seven o'clock, till Wednesday afternoon at three o'clock. At six o'clock of that afternoon the meconium of the infant was discharged, and at nine o'clock a still-born infant was thrown off. The placenta was retained by the hour-glass contraction, internal uterine hemorrhage followed, and the princess sank in little more than two hours after delivery.

In this most distressing case, the effects of allowing the first stage to be protracted, were strikingly manifested. The infant was destroyed by the continued pressure of the uterus upon its navel-string—the placenta was retained by irregular contraction of the uterus—internal hemorrhage took place from the same cause; and such was the exhaustion of the sensorial power, that the loss of

twenty ounces of blood¹ proved fatal to a young person, who had, previously to the commencement of labour, been in the enjoyment of robust health.²

From the time above specified, viz., 1800, the author has advised his pupils to secure the termination of the first stage of labour within twelve or fourteen hours from its actual commencement. By this, is to be understood, the fact of there being a continuance of regular pains, for it sometimes happens that, after regular pains have commenced, the agitation of the patient, or the mismanagement of the attendants, occasions a suspension for some hours. If there be no injurious pressure upon the passages during that suspension, the patient's strength is recruited, and the duration of the first stage is to be reckoned from the recurrence of the pains.

Young practitioners, the author is aware, may be deceived in their estimate of the duration of the first stage, especially in cases where the woman has had a family; for spurious pains are apt to precede the true ones, not only for hours but for days. Unless there be a decided tightening of the edges of the os uteri during the pain, labour has not commenced.

By the adoption of this rule (viz., securing the completion of the first stage of labour within twelve or fourteen hours), the author can confidently assert that no patient under his charge, for the last thirty-five years, has been above twenty-four hours in labour, and, excepting in cases of disproportion, none so long.³

He begs leave to contrast the result of his practice with the

¹ A particular account of the case of the Princess Charlotte, dated December 1, 1817, is inserted in the eighth volume of the London Medical Repository, Monthly Journal and Review. This account bears internal evidence of having been communicated under the authority of Sir Richard Croft himself, but there are three important omissions, in consequence of which the true nature of the case cannot be understood. *First*, It was not till three in the afternoon of Wednesday that the head of the infant cleared the os uteri, and consequently the first stage of labour was allowed to proceed from seven o'clock P. M. of November 3, till three o'clock P. M. of November 5, being forty-four hours. *Secondly*, At six o'clock P. M. of November 5, the meconium of the infant was discharged, which was a clear evidence that the life of the infant was in jeopardy, but the labour was allowed to proceed three hours longer. *Thirdly*, The exact quantity of blood found in the uterus after death is not specified. It is said to have been considerable, but, in point of fact, it did not exceed twenty ounces.

² The author perhaps erred by refraining from any allusion to this deplorable case for some time after it occurred, that is, during the life of Sir Richard Croft. He contented himself with showing the importance, and explaining the means of limiting the duration of the first stage of labour to twelve or fourteen hours, and he did not insist on this doctrine with his usual earnestness. Had he acted otherwise—had he brought forward the case as proving so incontrovertibly the validity of the change in the ordinary practice which he had so long adopted and advocated—he should have had to reproach himself with being accessory to the sad catastrophe of Sir Richard Croft.

³ He once supported the perineum, without leaving the patient for a moment, for twelve hours, but in that case the first stage lasted no longer than eight hours.

recorded evidence of the protraction of labour in London, Paris, and Dublin.

Dr. Ramsbotham, part i. page 248, records the case of a lady, whose labour was protracted from Monday, June 17, 1816, to Friday morning, June 21. He mentions another case, where the patient had been twenty-four hours in labour, on the 21st January, 1811, and she was not delivered till Tuesday, the 24th. In the second of those cases, it appears that the first stage had been allowed to go on from Sunday, the 20th January, to Wednesday afternoon, the 23d, or above sixty hours; in both cases the presentation of the infant was natural.¹ The same author has detailed a melancholy case, in further illustration of the injurious protraction of the first stage of labour. The first stage commenced on Sunday evening, when the membranes gave way. On Wednesday evening the head of the infant passed upon the perineum, and before midnight the head was born, but at half past three of Thursday morning, the doctor was sent for to extract the shoulders of an enormous dead infant. The poor patient died within two hours. Several other cases of protracted labour are recorded by Dr. Ramsbotham, to which reference is made in the subjoined note.²

Dr. D. Davis, in the work already alluded to, page 953, after objecting to Dr. Denman's definition of natural labour, expressly says,—“We constantly meet with labours which in every other respect might be considered natural, but which require more than twenty-four hours for their safe and prosperous accomplishment.” And in his testimony before the house of lords, in the case of the Gardner Peerage, on being asked “How long have you known a woman continue in pains of labour?” made the following answer: “In my own practice, I should not, as a general principle, allow a woman to remain in labour more than about thirty or forty hours; that is to say, if the labour be a decidedly active labour, and that is going beyond the period it would be generally safe.” On being farther questioned, “How long have you known the labour to continue?” his reply was—“I believe I did lately publish a case that went to the fourth day.”

Madame la Chapelle has published an account of fifteen thousand three hundred and eighty patients delivered in the Hospice de la Maternité of Paris, of which the following is a short abstract. Ninety-three individuals were delivered by the forceps, of whom she has recorded the history of forty-nine cases. She has given a table, page 147, vol. i., of the duration of labour in two thousand three hundred and ninety-five patients, after their admission into the Hospice de la Maternité, in the year 1811, by which it appears that twenty-six women were twenty-four hours in labour; nine were thirty hours; six were thirty-six hours; four were forty-eight

¹ Sir Charles M. Clarke says, in his evidence before the house of lords, in the case of the Gardner Peerage, “I have known a labour last five, possibly six, days; that I should say was the ultimum tempus.”

² Pages 322, 326, 329, 332, 335, &c.

hours; and one sixty hours. But in her account of the forceps cases, which occurred in 1816, she states that seven women were thirty hours; two were thirty-three hours; one forty-eight hours; two three days; two several days; and one had been nearly three days under the first stage. Thirteen women of the forty-nine died. Twenty-six infants were born alive.—Vol. i., page 176, *et seq.*

Dr. Breen published, in the year 1808, in the Dublin Medical and Physical Essays, Observations on the Management of Tedious Labour, and republished the same in the Edinburgh Medical and Surgical Journal, for 1819. In that paper he gives the following account of the duration of labour in the great Lying-In Hospital of Dublin.

Of one hundred and ninety-six women in labour of their first child, thirty-four had been between thirty and forty hours in labour; one hundred and two between forty and fifty; eleven between fifty and sixty; eight between sixty and seventy; twenty-four between seventy and eighty; four between eighty and ninety; twelve between ninety and one hundred; and one between one hundred and ten and one hundred and twenty hours. These one hundred and ninety-six women produced one hundred and thirty-five living infants, and fifteen of the women died. It is to be remarked, however, that those one hundred and ninety-six cases occurred in the course of six years, and were selected out of eleven thousand six hundred and five women delivered during that time.

Dr. Maunsell, accoucheur to the Wellesley Female Institution in Dublin, has reported, in the Edinburgh Medical and Surgical Journal, for 1833, page 295, the "obstetric practice" of that hospital during the year 1832, and has stated, that out of four hundred and twenty-three labours, fifteen lasted between twenty-four and forty-eight hours; two lasted sixty hours; and one seventy-two hours.

In the 15th number of the Dublin Journal of Medical and Chemical Science, Dr. Maunsell has continued his report of the "obstetric practice" in that institution. He states that of four hundred and sixteen cases which occurred between the 1st January, 1833, and the 1st January, 1834, the duration of labour in twenty-one women was between twenty-four and forty-eight hours; in three women, fifty-six hours; in three, sixty-four hours; and in one, seventy-two hours.

Dr. Thomas Edward Beattie has published, in the 22d No. of the Dublin Journal of Medical and Chemical Science, his first report of the New Lying-In Hospital, Dublin, for the year 1834. In that report he states, that of three hundred and ninety-nine women delivered in that hospital, twelve had been between twenty-four and thirty-six hours in labour; four between thirty-six and forty-eight hours; one between forty-eight and fifty hours; one between fifty and ninety-six hours; and one between ninety-six and one hundred and thirty-six hours.

Dr. Collins, of Dublin, has just published an interesting work, entitled, A Practical Treatise on Midwifery, containing the result

of sixteen thousand six hundred and fifty-four births occurring in the Dublin Lying-In Hospital during a period of seven years. According to his account, of fifteen thousand eight hundred and fifty patients, fifteen thousand and eighty-four were delivered within twelve hours from their admission into the hospital; five hundred and two within twenty-four hours; eighty-five within thirty hours; forty-nine within thirty-six hours; and one hundred and thirty above thirty-six hours.

The result of those tables may be briefly stated. Taking Dr. Breen's and Dr. Collins's account of the practice in the great Dublin Lying-In Hospital, it appears that out of above twenty-seven thousand deliveries, every sixtieth woman had been allowed to continue in labour above twenty-four hours; that in the Wellesley Institution of Dublin, taking the two years reported by Dr. Maunsell, the duration of labour exceeded twenty-four hours in every eighteen women and one fourth; and that in the New Lying-In Hospital, under the charge of Dr. Beattie, one woman in twenty-one had her labour protracted above twenty-four hours.

While in London, Paris, and Dublin, the author's suggestions respecting the management of the first stage of labour have hitherto been totally disregarded, he has much pleasure in recording, that his friend, Dr. Burns, of Glasgow, has gradually become a convert to this innovation, evidently from his own intelligent observation in practice. In his first edition, page 242, he says—"It is impossible to determine how many hours a labour may be permitted to continue, for time alone is not to be our rule—we must be regulated greatly by the effects of the labour." While, in his second edition (published 1811, page 320), he repeats the same words, he says, page 318—"If, on the other hand, the os uteri be lax, and thin or soft, it is both safe and advantageous to dilate it gently with the finger during a pain. If this be done cautiously, it gives no additional uneasiness, whilst the stimulus seems to direct the action of the uterine fibres more efficiently towards the os uteri, which sometimes thus clears the head of the child very quickly, and the pains, which formerly were severe, but, in the language of the patient, unnaturaal, and doing no good, become effective and less severe, though more useful."

In his fifth edition, published in 1820, he adds to the above observations the following.

"In the case I have just considered, I have spoken of the effects of dilating the os uteri, but I do not mean to say that the practice is useful in such a case alone; for in most cases of tedious labour it is beneficial, and as the subject is important, I shall explain my sentiments on it fully. Forcible and irritating dilation of the os uteri, even when it is not productive of dangerous consequences, is apt to occasion irregular or spasmodic action of the uterus. Two circumstances are necessary to render it safe; the os uteri must be lax and dilatable, and the dilatation must be gradually and gently effected during the continuance of a natural pain. If attempted in the absence of pain, and especially if attempted so as to give pain,

it is apt to excite partial or spasmodic action, and, under any circumstances, violent or forcible dilatation, besides injuring the uterine action, may lay the foundation of future disease. It is done best by pressing on the anterior edge of the os uteri during a pain, with two fingers, with such moderate force as shall not give additional pain, and shall appear to excite the natural dilatation as much as to produce mechanical opening. By doing this for several pains in succession, or occasionally during a pain, at intervals, according to the effect produced, and the disposition to yield, we shall soon have the os uteri completely dilated. This is an old principle, but it was rashly practised, and too universally adopted, which made it meet with just reprobation; and some, knowing this, may be surprised at meeting with such an advice in modern times. Let not the principle suffer from its abuse, else where is the plan which could stand its ground? It is perfectly clear, that when the process is going on well, interference is improper; but it is no less evident, that if a long time is to be spent in accomplishing the first stage of labour, or dilatation of the os uteri, the vigour of the uterus and strength of the patient may be impaired so much as to render the subsequent stage dangerously tedious, or to prevent its completion, at least consistently with safety. The first stage of labour ought always to be accomplished within a certain time, varying somewhat according to the constitution of the patient, and the degree of pain. It is an undeniable proposition, that there is in every case a period beyond which it cannot be protracted without exhaustion; and it is no less certain, that if we wish to avoid this exhaustion, which may be followed by pernicious effects, we have only the choice of either suspending the action altogether for a time, or of endeavouring to render it more efficient, and of effecting the desired object within a safe period. The first is sometimes adopted, but is not always practicable, nor is it always prudent to counteract uterine action by strong opiates. The second is safer, and one of the means of doing so is that under consideration. If the pain be continuing without suspension, or an interval of some hours, and the labour be going on all the time, but slowly, it is a good general rule to effect the dilatation of the os uteri within ten or twelve hours at the farthest from the commencement of regular labour. This is done if the os uteri be flat, and applied to the head by the method above described. If it be somewhat projecting, it is aided by introducing two fingers, and extending them laterally with gentleness during a pain. The dilatation is easily and safely effected, if the case be proper for it; if not, bleeding or an opiate, if the former be not indicated, will soon bring about a favourable state. Of the benefit and perfect safety of this practice I can speak positively, and am happy to strengthen my position by the authority of Dr. Hamilton, who makes it a rule to have the first stage of labour finished within a given time." Dr. Burns has repeated the same in his last editions.¹

¹ *Vide* sixth edition, page 418; eighth edition, page 411.

It is most gratifying to observe the progress by which this opinion has been impressed upon the mind of Dr. Burns.

Having laid down the principle, that wherever there are regular pains, the first stage of labour should be completed within twelve or fourteen hours from its real commencement, the author, before detailing the practice, considers it necessary to recall to the reader's recollection the mechanism of this stage.

That the os uteri is forced open by the labour pains, which in fact are the contractions of the muscular fibres of the uterus, nobody doubts. But perhaps it has not been sufficiently adverted to, that two effects are produced by those contractions, viz., the thickening of the substance of the uterus, and of course the diminution of its volume, and the forcing of the uterine contents against the aperture of the os uteri. The former of these effects is proved by the gradual thickening of the edges of the os uteri, for however thin they may be at the commencement of labour, they become considerably thickened previous to their complete dilatation.

The ordinary treatment of the first stage, where the process proceeds favourably, is well understood. The patient is kept in a cool atmosphere—in a state of quiescence—with cooling diet;—the bowels are cleared artificially, if necessary, and any uncomfortable feelings are palliated as they occur. And when the os uteri is dilated so much that a crown piece could be passed through it, she is put to bed in the posture in which she is to be delivered.

With respect to the deviations in the progress of this stage, it is unnecessary to take into consideration those rare cases where it advanced with great rapidity. The author has ascertained that in some individuals the dilatation of the os uteri proceeds unconsciously to the patient for many days before uterine contractions occur.¹ In such cases, the first pain completes the dilatation, and if the woman have already had a child, the birth of the infant is accomplished within less than half an hour. It is obvious that no other means can be adopted to guard against such surprises, than having a well instructed midwife in constant attendance, for at least a fortnight before the expected period of the delivery.

Protraction of the first stage is the more common deviation, and, according to the author's experience, it arises from the following causes, viz., premature discharge of the liquor amnii—natural toughness of the os uteri—contraction of the cervix uteri, in consequence of an undeveloped band of fibres—great relaxation of all the parts lining the pelvis—and the interception of a portion of the cervix uteri between the presenting part of the infant and the bones of the pelvis.

Firstly, The discharge of the liquor amnii not unfrequently takes place previous to the commencement of uterine contractions, which is the most untoward occurrence, especially in a first labour,

¹ He has repeatedly ascertained that, in some individuals, the aperture of the os uteri could admit the introduction of a half crown piece a fortnight before labour actually commenced.

as it tends to render the process tedious, more than usually painful, and sometimes dangerous. Tedious, because one of the powers, (*viz.*, the soft wedge formed by the membranes) by which the os uteri is opened, is lost—painful, not only because the uterine contractions are stronger than the constitution can bear at the beginning of labour, but also because the person of the infant presses upon the edges of the os uteri—and dangerous, because the strong uterine contractions, if the dilatation be tardy, tend to alter the position of the infant.

This latter effect of the premature rupture of the membranes was noticed by the author at a very early period of his professional life. He was repeatedly called in to cases of the presentation of the shoulder, where most intelligent practitioners assured him, that in the early part of the labour they had distinctly felt the head present, and he had no doubt of the fact, and that the alteration of the position of the infant was occasioned by the strong labour pains, and the undilated state of the os uteri.¹

Secondly, Natural toughness of the os uteri. There is a wonderful difference in the facility with which the os uteri opens in different individuals, and the appearance of the patient furnishes no correct indication on this point, for in many strong muscular women, the dilatation proceeds easily, while in many relaxed delicate individuals, its progress is both tedious and painful.

Of this general proposition, many cases might be cited in illustration, but it may be sufficient to mention two which happened within a few weeks of each other. One of the patients was thirty-four years of age. She had been supposed, from an early period of her pregnancy, to be liable to inflammatory affections, and had been bled and starved to so great a degree that, when labour began, she was so relaxed that the skin of her arms did not fit the subjacent parts. When the author was called in, she had been for

¹ This opinion has been much misunderstood by a respectable old pupil, the late Dr. Kelly of Dublin, in his *Essay on the Spontaneous Evolution of the Fœtus*, page 4. He says, "The following observation, which I find in Dr. Hamilton's *Treatise on Female Complaints*, is not remarkable for the perspicuity usually observable in his writings:—'But when the water that surrounds the infant is discharged prematurely, the strong pains which follow may push the head to one side, and the shoulder or some other part may thus be made to present, as it is technically expressed.'

"That the head may, under certain circumstances, be pushed to one side, I can readily comprehend, but how the premature discharge of the water produces such an effect I cannot perceive."

Of the fact, that the head may be pushed aside and the shoulder forced down, there can be no doubt, and the explanation appears to the author abundantly simple. Every practitioner knows that the uterine contractions are much stronger after the discharge of the liquor amnii than while the membranes are entire. These contractions act directly upon the infant. If, therefore, its head be still upon the brim of the pelvis, and the undilated state of the uterus prevent its advance, it may be pushed to one side and the shoulder forced down. The premature rupture of the membranes, therefore, acts in thus altering the position of the infant by exciting violent uterine contractions at a period when the apertures do not permit the advance of the infant.

many hours in hard labour, and although every two minutes there was such pressure upon the os uteri that there was great risk of its bursting; its aperture could admit no more than the point of the fore finger.

The other case was that of a lady who had always lived in the country, who was of a robust form, and of a rigid fibre, and who had exceeded the fortieth year before marriage. In her case, the dilatation was completed within eight hours.

Where the first stage is retarded by the natural toughness of the os uteri, the sufferings of the patient are always more or less distressing. There is a feeling of wretchedness which is not relieved during the intervals of the pains. Sickness at stomach, with excessive retchings, are very usual symptoms—restlessness and despondency are the natural consequences.

Thirdly, Resistance to the dilatation, in consequence of an undeveloped band of the cervix uteri, is happily of rare occurrence, for if not understood it is productive of a degree of distress which can hardly be described. The author has been called in to cases where patients have been suffering from this cause for above thirty hours, and where the symptoms were truly alarming. Great heat of the surface—frequent pulse—constant nausea—and occasional tremours resembling convulsions, and distinguished only by the consciousness remaining entire, are the symptoms produced by the protraction of labour from this cause.

As has been already mentioned, this state of the cervix uteri is of rare occurrence, insomuch that the author has not seen, he believes, above a score of individuals in whom it has occurred; but he has found that it is constitutional. He attended one patient in whom it occurred in seven successive pregnancies. This lady had had three children before she was put under his care, and each of her labours had been of more than three days' duration.

This cause of protracted labour can be detected without difficulty, for the edges of the os uteri swell during the pain, as if distended with air, becoming relaxed when the pain ceases; and notwithstanding strong labour throes, neither the membranes nor the infant are brought in contact with them. If, during the interval of the pains, the finger be carried up within the os uteri, the stricture of the cervix will be distinctly perceived.

Fourthly, Relaxation of all the parts lining the pelvis is most commonly the effect of frequent child-bearing in women of a relaxed habit. In such cases, the contraction of the uterus, instead of dilating the os uteri, forces down the contents of the pelvis upon the external parts; and although the author has been called to one case only where the undilated uterus was partially protruded through the external parts, he has attended several cases where, but for proper assistance, this untoward occurrence must have happened. In one case, where he had to perform the operation of turning, he felt distinctly a band of the vagina protruded along with the head.¹

¹ To his surprise this patient recovered without one unfavourable symptom.

Fifthly, The interposition of a portion of the cervix uteri between the head of the infant and the bones of the pelvis happens where the membranes are prematurely ruptured—where some part of the infant, together with part of the cervix uteri, had entered the pelvis previous to the commencement of labour, and where the infant's head is unusually large, or the aperture of the pelvis rather small.

This cause of protraction may be distinguished by there being, notwithstanding the continuance of strong pains, only a very slight tightening of the edges of the os uteri on the occurrence of every uterine contraction, after there had been a certain progress in the dilatation. The explanation of this cause of protraction is quite obvious. The pressure of the head of the infant forcing a band of the cervix uteri upon the bones of the pelvis must prevent the contractions being extended to the os uteri.

If this cause be overlooked, the continued pressure must induce all the injurious effects of interrupted circulation, and must prove equally dangerous to the infant and to the mother.

In the year 1804, the author had occasion to see a very deplorable illustration of this error. One of his old pupils (dead several years ago) called upon him one winter evening about ten o'clock, to consult him about the case of a poor woman, a soldier's wife. He said that she had been three days and nights in continued labour, but that the os uteri was still little dilated, although in the intervals of the pains its edges felt quite relaxed.

On considering the circumstances, the author's impression was, that the dilatation of the uterus was prevented by the interception of a portion of the uterus between the bones of the pelvis and the head of the infant, and he explained to his friend, who was one of the most conscientious and humane practitioners he ever knew, the means of ascertaining the fact, and the treatment to be adopted, if it should prove correct.

Early next morning this gentleman called upon him to mention that the opinion of the author was strictly accurate; that he had found the neck of the womb strongly wedged between the head of the infant and the bones of the pelvis; that as the cuticle of the infant was peeling off, and its head was in an emphysematous state, he had considered it his duty to relieve the poor woman with the least possible delay, and had accordingly delivered her by means of the crotchet, which he had found a much easier operation than he had anticipated. He added, that the poor woman was very weak, and that a visit from the author (which, by the by, had been offered on the previous night, and declined) would be most satisfactory to him.

There was no delay in paying the requested visit; for the state of the patient, as described, seemed to be most urgent. The poor woman was in fact found to be moribund, and she survived the delivery only about ten or eleven hours.

It was seen, on inspecting the body, that not only the parts which had been in contact with the head of the infant, but even also the

muscles attached to the brim of the pelvis, were in a state of gangrene.

In relaxed women, who have had a large family, where the membranes burst prematurely, the head of the infant included in the uterus is apt to be pushed down into the cavity of the pelvis, in the course of an hour or two after the occurrence of strong pains, and if it be of an unusual size, by its intercepting a band of the uterus between itself and the bones of the pelvis, it occasions a compressible swelling of the os uteri, which is apt to perplex a young practitioner.

Having explained the causes of the protraction of the first stage, the appropriate means for counteracting these fall next to be considered.

The author is most anxious to explain, to the junior part of the profession especially, what is meant by the protraction of the first stage, for he is every year called in to cases where great mistakes upon this point are committed, chiefly in consequence of supposing spurious pains to be the true pains of labour. He has already hinted at the means of distinguishing the two, and he now repeats that spurious pains are irregular in their recurrence and duration, and that they produce no influence upon the edges of the os uteri. True pains, on the contrary, recur with regularity, are preceded by feelings which announce their approach, and are accompanied with a tightening of the edges of the os uteri. It must be allowed that the tightening is comparatively trifling in those cases where a band of the uterus is intercepted between the head of the infant and the bones of the pelvis, but there are means of distinguishing the two cases, to be detailed by and by. There is another source of error; for it is certainly possible that after the first stage is fairly begun it may be suspended for some hours, the uterine contractions no longer recurring. If, during this interval, there be no injurious pressure upon any part of the mother, the previous pains are not to be reckoned, but the duration of the first stage is to be dated from the recurrence of pains.

Premature rupture of the membranes is an accident which, in many cases, can be neither foreseen nor prevented, as it may take place spontaneously before there be any contractions of the uterus. Although always an untoward occurrence, (for the reasons already specified,) especially in a first labour, it does not invariably protract the first stage; but if it be allowed to do so, the patient's strength is sooner exhausted than in some of the other cases of protraction, because, after the discharge of the liquor amnii, the uterus acts with great force, which is apt to wear out the woman's strength.

A young practitioner must therefore naturally wish to be informed what is to be done in a case where the liquor amnii is suddenly discharged without previous pain. It is absolutely necessary to institute an examination, in order to ascertain, *first*, if there be any progress in the dilatation; and, *secondly*, if the position of the infant be natural. This is a duty which is always disagreeable to the patient, and is therefore often resisted, for it is

not easy to make her understand the utility, or even the necessity, of such an examination ; but, in general, it is unsafe to dispense with this investigation.

Many respectable practitioners recommend, that, where the liquor amnii is discharged without previous pains, the abdomen should be firmly compressed by means of a roller, in order to secure the complete discharge of the water, and to accelerate the accession of labour throes. But, unless under particular circumstances—viz : where the patient's health had been previously in a precarious state—the author has never sanctioned such means.

When the pains take place, if the dilatation prove tedious—that is, if the continuance of strong pains for six or eight hours do not advance the dilatation to such a degree as to give reason to expect its completion within a few pains—it becomes necessary to interfere, lest the patient's health should suffer.

Generally speaking, venesection, to the extent of from sixteen to twenty-four ounces by weight, furnishes the readiest means of promoting the dilatation. But cases from time to time occur where the patient cannot bear the subtraction of blood, and where it becomes necessary to administer an opiate enema. There are also cases where supporting the os uteri during a pain is indispensable.

For the relief of the second cause of protraction—viz : natural toughness of the os uteri—various means have been employed. In some cases, violent sickness and vomiting are followed by a sudden dilatation of the os uteri, after it had resisted for many hours the strongest labour pains ; and it has, therefore, often occurred to the author that artificial vomiting might be useful in such cases. But he has not yet ventured upon the experiment—because vomiting during the first stage of labour, though not an unfrequent symptom, must necessarily endanger the rupture of the uterus ; and because, in some particular individuals, it is extremely difficult to allay vomiting when once excited. He admits, however, that if he had not ascertained that other means were both useful and safe, he should have made a fair trial of the effect of vomiting.

Hitherto, in a very large proportion of the cases of protraction from this cause, he has found copious blood-letting rapidly promote the dilatation. By copious blood-letting he means abstracting as much blood by one venesection as he should direct in a patient of a similar constitution, if she were labouring under an acute inflammatory disease.

In cases of relaxed, debilitated women, with toughness of the os uteri, venesection cannot be ventured upon, and it becomes necessary to administer an opiate enema. The author had recourse to this practice, he must confess, with great reluctance, having seen many cases where the administration of opiates had been prejudicial ; but he can now say, that, under proper management, the practice is safe.

The utility and safety of the practice are mainly influenced by the time at which it is adopted. If strong and frequent pains, continued for six or eight hours, do not decidedly promote the dilata-

tion, the opiate enema should be had recourse to, and it will seldom disappoint the expectations of the practitioner.

But if the first stage (with strong and frequent pains) be allowed to go on for twelve hours or upwards, without having completed the dilatation of the os uteri, there is the risk that the opiate will so far interfere with the progress of the labour, that instrumental delivery shall become necessary.

In some of the periodical medical publications, certain speculative proposals have been made for dilating the os uteri—such as the actual application of the extract of belladonna—but the author has never considered it fair to make any such experiments.

The third cause enumerated requires, in the *first* place, venesection, if the patient's health will permit; *secondly*, the administration of an opiate enema; *thirdly*, half an hour after the opiate, pressure on the resisting band of the uterus with the point of the finger during each successive pain. The finger is to be carried above the stricture, and the pressure is to be made from within outwards. In all the cases to which the author has been called, these means have overcome the difficulty in the course of an hour.

The fourth cause of the protraction of labour in the first stage—viz: such a relaxation of all the parts lining the pelvis, that the undilated uterus is, during every pain, forced down upon the external parts—may be easily counteracted. It is only necessary, by the application of two fingers to the edges of the os uteri, to retain the uterus *in situ* during every pain, till the head of the infant pass into the vagina. The practitioner is to confine his assistance to the attainment of this object alone, and he is most particularly to guard against any attempt at forcing open the os uteri.

As already mentioned, the interposition of a band of the uterus, between the head of the infant and the bones of the pelvis, is a more frequent cause of the protraction of the first stage than has been generally supposed.

To an inexperienced practitioner the first difficulty in such a case would be that of ascertaining the cause of the protraction; and as there are complications, it is not easy to give directions for distinguishing this particular case, which can be applied in every instance.

The rupture of the membranes at an early period of the labour generally happens, but not invariably. The author has been called in to several cases where the patient had had a large family, where the membranes were entire, the head of the infant considerably advanced within the pelvis, with regular pains; and where the dilatation of the uterus, after proceeding to a certain extent, had remained stationary for several hours. On rupturing the membranes, the pains still exerted no influence in dilating the os uteri.

But the most certain evidence of this cause of protraction is, that strong pains are not felt to advance the head of the infant. In ordinary cases, especially where the patient has formerly had a child, after the head of the infant has fairly entered the pelvis, every pain can be distinctly perceived to press it more or less forward,

even although resisted by the undilated state of the uterus. But in the case under consideration, it remains wedged at one spot, although not in contact with the os uteri.

For the purpose of overcoming this cause of difficulty, it becomes necessary to make counter pressure against the edges of the os uteri every pain, till it be fully dilated, which in most cases will be accomplished in the course of an hour or little more.

After this preliminary process has been completed, the practice must be varied according to circumstances. If the head be felt to be exactly in the natural position—that is, with the vertex presenting—it may be concluded either that the infant is of an unusual magnitude, or that there is a slight narrowness of the pelvis; and in either case the effectual means of giving relief is, during the pain, to press up that band of the uterus which is between the head and the pubes. When that is effected, the band next the sacrum is then to be pressed upon; and whenever it yields, the difficulty is overcome, the infant rapidly advancing.

Malposition of the infant's head occasionally proves the cause of this obstacle to delivery; and the most ordinary malposition is, the face turning towards the pubes, instead of passing along the sacro-iliac synchondrosis on either side.

The late Dr. John Clarke, who deservedly attained high eminence in the profession, inserted in the second volume of the *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*, page 229, *Observations on the Management of Cases in which the face of the child presents towards the os pubis*, dated April 3, 1798. In this communication, he states that “in thirteen out of fourteen cases where he found the face turned towards the groin, by making pressure upon the side of the head, the occiput in the space of a few minutes was brought to the groin from the sacro-iliac joint of the same side;” he adds, that “the consequence was, that, instead of the face, the occiput was borne towards the pubis, and thus considerable pain and difficulty were avoided.”

It is unfortunate that Dr. Clarke has expressed himself so vaguely, for he has not stated at what period of the labour this assistance was given. If the face be towards the groin, as he has described, and the occiput towards the sacro-iliac synchondrosis, the anterior fontanelle of the infant must be the presenting part; and, nevertheless, the long diameter of the head must be in the direction of the widest part of the pelvis, although occupying more room than when the vertex presents. But if there be no band of the uterus interposed between the infant and the bones of the pelvis, there can be no resistance to the advance of the infant, till it come in contact with the coccygæi muscles and sacro-sciatic ligaments. There is then certainly a risk that the face be turned towards the pubis, if the practitioner have not sufficient intelligence to make strong pressure upon the brow, which is generally sufficient, in the course of a few pains, to turn the face into the hollow of the sacrum.

But Dr. Clarke's practice does not apply to the cases for which

he has recommended it. He himself says, "Cases in which the face of the child presents towards the os pubis;" but the cases described in his communication are specifically stated to be cases where "the face was towards the groin," and not to the pubis.

What the author means by malposition of the head of the infant, the face being towards the pubis, and a band of the uterus interposed between the infant and the bones of the pelvis, is, where the brow of the infant is in actual contact with the symphysis of the pubis. In those cases, the more the infant is advanced the greater must be the difficulty, because the long diameter of the child's head must be more and more wedged within the narrow diameter of the cavity of the pelvis. It is quite evident, therefore, that if the face can be turned to either groin, the infant will be immediately accommodated to the aperture through which it should pass, and the injurious pressure upon the band of the uterus thereby removed; and, generally speaking, this may be accomplished by suitable counter pressure. During the interval of the pain, the head is to be steadily pressed upon so as to disengage it; and when the pain recurs, the parietal bone on either side is to be strongly pressed upon, so as to turn the face towards the groin. When this is accomplished, it will in the majority of cases be found, if the woman have already had a family, that the head is so loose in the passage, that by a continuance of counter pressure the face may be brought into the direction of the sacro-iliac synchondrosis, and the whole difficulty will be thus overcome.¹

ON THE MANAGEMENT OF THE SECOND STAGE OF NATURAL LABOUR.²

When the author admits, that, in the general principles on which the treatment of the second stage of natural labour is conducted by British practitioners, he has little deviation from the

¹ In cases where it is found, that, after the completion of the first stage of labour, the face of the infant presses upon the symphysis pubis, there are two modes of practice to be adopted—viz: to press the brow upwards during each pain, so as to bring the occiput to fill the posterior part of the pelvis, or, during the interval of the pain, to press the face towards one side of the pelvis; to accomplish which, the head must be first pressed gently a little upwards. The former practice will be found successful where the pains are strong and forcing, especially where the patient has already had a family. The latter practice is applicable where the pains are not strong, and where it is the woman's first pregnancy.

² By natural labour, the author means all cases where the head of the infant is forced foremost, and where the labour is completed within twenty-four hours from its actual commencement with safety to the mother and infant. This is the fair definition of natural labour, notwithstanding the objections of Professor Davis; for the term ought to be made applicable to the ordinary cases which occur, and accordingly it comprehends nine cases out of ten of every labour, at least, where ordinary attention is paid.

established practice to propose, it may seem inconsistent with his professed object in this publication to offer any remarks on the subject.

But he has long been convinced that the details on the treatment of this stage of natural labour are still imperfectly understood, not only upon the Continent, but in Great Britain and Ireland; and he could adduce in evidence, if required, the numerous cases of mechanical injury, notwithstanding the labour having been natural, on which he has been annually consulted for a great number of years. He deems it, therefore, incumbent upon him to give an account of the practice which he thinks ought to be pursued in conducting the second stage of natural labour.

When the os uteri is sufficiently dilated to warrant the expectation that the first stage shall be completed within a few pains, the patient is to be placed in the proper posture, (in bed on the left side, with her knees drawn up and her body bent forward,) and the practitioner is to watch for the pain which partially protrudes the head through the os uteri, that he may examine carefully whether any part of the infant—such as a hand, or a portion of the navel-string—be passing down along with the head, or whether a band of the uterus be intercepted between the infant and the pubes. Happily these occurrences are rare; but the author has seen every year cases where inattention to this rule had proved fatal to the infant, and injurious to the mother.

If the navel-string or hand of the infant, or a portion of the uterus at the anterior part of the pelvis, be coming down along with the head, it is quite easy, by counter pressure with two fingers, during a few pains, to secure the head clearing the uterus, and descending alone into the cavity of the pelvis.

It is a generally received precept among the profession, that, whenever the head begins to press upon the perineum, the assistance of the practitioner is required to prevent laceration; and it is well known that this is chiefly necessary where it is the patient's first child. The directions, however, for this purpose, both by British and by foreign practitioners, seem to the author to be most unsatisfactory. Thus Dr. Denman gives the following directions, page 395, vol. i.

“But it will generally be sufficient for the practitioner to resist the progress of the head of the child during the time of a pain, by placing upon it the fingers and thumb of the right hand, so formed that they may bear upon many points; or to apply the palms of one or both of the thumbs (hands?) in such a manner that they shall at the same time support the *fourchette*, or thin edge of the perineum. But in first children, when, from the vehemence of the patient and the rigid state of the parts, there is great reason to apprehend a laceration of the perineum, then, occasionally calling in the other means to our aid, we shall be able to give the most powerful and effectual support, by applying the palm of the left hand, covered with a soft cloth, over the whole temporary and natural perineum, and the right hand employed, as was before mentioned,

with a force sufficiently firm to resist the exertions of the patient during the violence of the pain. In this way we are to proceed till the parts are sufficiently dilated, when the head may be permitted to slide through them in the slowest and gentlest manner; and we are never to quit our attention till it is perfectly cleared of the perineum. Should there be any delay or awkwardness when the perineum slides over the face, the fore finger of the right hand must be passed under its lateral edge, by which it may be cleared of the chin before the support given by the left hand is withdrawn. When the pains are exceedingly strong, and the patient restless in her efforts, the head will sometimes be expelled with wonderful velocity, in opposition to all the resistance we are able to make; but, by this calm and steady proceeding, we may be assured that we shall, under all circumstances, wholly prevent, or greatly lessen, all the evils to which she would have been liable, if our conduct had been different.

“It is necessary to observe, that these attempts to prevent the laceration of the perineum produce some effect upon the head of the child, and upon the parts of the mother. In the application, therefore, of the resisting force, we must not only be careful that the position of the patient is proper, and such as will allow us to act with advantage, but that we do not make any injurious or partial pressure; because, if a partial support be given to the perineum, the head of the child is projected against an unsupported part, and the danger of a laceration is increased. The support must be equally applied, and uniformly exerted; and then there will be no greater prejudice done than what might be occasioned by the rigidity of the parts.”

Theoretically, those directions are most plausible, and indeed are unexceptionable; but when followed in practice, they must disappoint the expectations of the practitioner in two respects. *Firstly*, That if there be a soft cloth interposed between the perineum and the hand of the practitioner, it is impossible to give that efficient support to the parts on the stretch which Dr. Denman inculcates; and, *secondly*, If the right hand be employed in retarding the advance of the infant every pain, while the left hand is applied to support the perineum, there are not many practitioners who could undergo this fatigue in cases of a first labour. In this part of the kingdom, the perineum requires to be supported in such cases from two to five hours and upwards.

There is another objection to Dr. Denman's practice, viz., that he has suggested no other means than counter pressure for alleviating the sufferings of the poor woman during this period of the labour.

Professor Davis, in the work already quoted, (page 964,) gives the following directions on this subject.

“If this fact be admitted, the proper assistance to be extended in such cases should be founded on the principle of counteracting the dangerous violence of the uterine throes, and of preventing the perineum from being exposed to the full amount of their impulse. This is to be done by opposing a firm and steady bearing to the

head when felt to be borne down too strongly against the perineum, and to be impelled by a *vis a tergo* disproportionate to our experience of the ordinary efforts of nature. In the performance of this duty we accomplish our object most effectually, not by applying the palm of the hand to the perineal tumour, as erroneously directed by some writers; but more directly and dexterously by opposing the whole of our modifying and resisting force, by the application of the points of the fingers and thumb of the right hand to the presenting part of the fœtal head. The danger of rupture arises not from any extraordinary bulk of the head, as is very often supposed, but generally, without a doubt, if not always, from the suddenness and violence of the impulse which it makes against the perineum. The duty of protection, therefore, must obviously consist in opposing a moderate resisting force to the inordinate violence of the natural efforts; or, in other words, in compelling nature to observe those rules of caution and slow progressiveness on which she would seem to have founded her ordinary security.

"In some few cases of unfavourable position of the fœtal head or of irregular form of the pelvis, it might indeed be necessary to apply the fingers of the left hand to the posterior part of the perineum and neighbourhood of the os coccygis; in order to guard against any sudden accident which otherwise might be there incurred. During the performance of this latter service, it is scarcely necessary to intimate, that a liberal use of napkins should be considered as indispensable."

It is obvious that Dr. Davis, in these directions, has totally overlooked two important considerations, viz., alleviating the sufferings of the patient, and taking means to assist the dilatation of the passages.

Professor Burns has detailed, better than any other British author, the exact method of supporting the perineum in ordinary cases, and yet he has committed the same omissions as Dr. Denman and Dr. Davis, with an additional mistake, which may, however, be an error of the press.

His directions are these, (page 366, eighth edition.)—"A soft cloth is to be laid on the perineum, and when the second stage of labour is drawing to a conclusion, the hand is to be placed on this, in order to prevent the too rapid delivery of the head, and the consequent laceration of the perineum." "We may decidedly say, that the perineum is torn in consequence of distension; but in every delivery the perineum must be distended, and in some to a great degree. In proportion to the facility of the distension, and the ease with which the orifice of the vagina dilates, is the risk of laceration diminished. It has, therefore, become a practical rule to resist, with the hand placed on the perineum, the delivery of the head, until the parts be sufficiently relaxed; and this pressure ought to be exerted over the whole tumour, but especially at the *fourchette*; for, although the perineum have been perforated by the head, which did not pass through the orifice of the vagina, but through it, yet, usually, the rent begins at the *fourchette*, and pro-

ceeds backwards, to a greater or less degree. In every case, the *fourchette*, often a small part of the posterior surface of the vagina, is lacerated, though the integuments of the perineum remain sound. By firmly supporting the perineum, and, at the same time, exhorting the patient not to force down, during a pain, and thus retarding the delivery of the head, until we feel the vulva as well as the perineum relaxing, we may generally prevent laceration; and, therefore, this accident shall seldom if ever happen in the hands of a prudent practitioner. Still, it is possible for the perineum to be torn under good management. A little bit of it is not unfrequently lacerated, notwithstanding all our precaution; and although in this slight degree it be of no consequence, yet we thus see that art cannot completely prevent the accident. Sometimes the restlessness of the patient almost inevitably prevents the necessary precautions from being used; and it may happen that the frame is so very irritable that the perineum unexpectedly lacerates, at a time when it is supposed to be in a favourable state. As there must be some point where the resistance ought to stop, else the labour should be unnecessarily protracted, or perhaps even the uterus injured, it is possible that such resistance may be made as generally is sufficient to prevent the accident, but which may not, in some particular case, owing to the irritable state of the perineum, be adequate to the intended purpose; or the power of the uterus may be so strong as to expel the head, in spite of every allowable resistance; and in some of these cases it is possible for the perineum to be torn.

“It is not sufficient that the practitioner support the perineum until the head is going to be expelled; he must continue to do so whilst it is passing out, for there is then a great strain on the part, as the forehead is passing over the perineum; even the face or chin moving along it may produce injury. He ought not only steadily to support the perineum with the whole hand, but have that so placed that the thumb, fore finger, and their junction, shall form an arch, embracing the margin of the perineum and distended labia, and sustaining the head as it projects. The perineum is to be, as it were, guided, and at the same time supported, backwards, over the head and face, that it do not lacerate. After the head is delivered, it is still necessary to place the hand under the chin, and on the perineum, for the arm of the child comes, next, to press against this part, and may either tear it by pressure, or by coming out with a jerk. Farther, to prevent injury and avoid pain, the body of the child should be allowed to pass out in a direction corresponding to the outlet of the pelvis, that is to say, moving a little forward.”

In the above directions, Professor Burns advises that the perineum should be supported backward over the head and face of the infant, but he surely meant forward.

As to the foreign practice, at least that adopted in France, where midwifery is considered on the continent to be better understood than in any other continental state, the position in which patients

are placed during labour, seems to the author very ill calculated to enable the practitioner to give proper assistance during the progress of the infant through the external passages, and, accordingly, it is evident from the admission of almost all foreign authors, that laceration of the perineum is a common occurrence upon the continent.

Baudelocque, paragraph 822, says, (vol i. page 418,)—"When the child's head begins to press against the external parts, it is sometimes proper to prepare them, that they may not be injured in the last moments. Besides fat substances, such as lard, &c., which we are to apply often, we may introduce two fingers into the vagina, to enlarge it by degrees, as well as the vulva, either by separating the fingers in different directions successively, or by pressing downward against the perineum. But this is only to be done in the interval of the pains, contenting ourselves during their action with supporting the perineum with the palm of the hand, in order to prevent its tearing, and to hinder the head from being delivered too suddenly.

"823. These preparations¹ are never more necessary than in a first labour. If they are omitted then, we are commonly freed from the necessity of using them afterwards; because the perineum being torn never unites perfectly, nor do the other parts ever recover their natural tone.

"824. When the posterior extremity of the head is engaged in the vulva, as in a kind of crown, if the *fourchette* is not too much distended, we may permit the woman to indulge her inclination to bear down; and during that time, without however discontinuing to support the perineum, we may favour the exit of the head, by pressing against it underneath, and near the anus of the woman, as it were to oblige it to ascend towards the mons veneris.

"825. The vulgar think that at this time the accoucheur takes the child by the ears to pull it towards him. If it is ridiculous to believe it, it would be much more so to propose it, as has been done on another occasion. It would not answer any better to attempt to insinuate the hands on each side the head, in order to grasp it; or to introduce the fingers into the anus of the woman, to press it from behind forward, and force it out.

"826. The head being almost delivered, we finish its disengagement by raising it more and more towards the pubes; or by insinuating one of the fore fingers under one of the sides of the lower jaw."

Gardien says, (vol. ii. page 287,)—"The more certain method of preventing the laceration of the perineum, is that which was suggested by Puzos, and has been adopted by Smellie and Baudelocque, viz., supporting the perineum till the external passages are sufficiently dilated to permit the exit of the infant. With this view the fingers, or the palm of the hand, are to be so applied to the *fourchette* and perineum, as to form an inclined plane, over which

¹ Heath's Translation of Baudelocque, page 419.

the head of the infant may slide. It is necessary to avoid applying the thumb and the extremities of the fingers to the labia, because this would impede the dilatation of the passages. For the further purpose of preventing the laceration of the perineum, the thighs are to be moderately bent upwards and separated, for if they were very much drawn up and separated, the perineum would be put greatly upon the stretch, which would oppose the progress of the infant. During every pain, while the perineum is pressed up towards the pubes, such pressure is to be made upon the anus as to force the head of the infant towards the arch of the pubes, thus favouring the natural progress of the infant's head." Mons. Gardien adds, that "he has found it highly conducive to the safety of the perineum, when the infant's head is partly expelled, to press down the occiput, by the application of the fingers towards the arch of the pubes, or to insinuate the fore finger of the hand which supports the perineum, underneath the lower jaw of the infant."

The directions of Mons. Velpeau (vol. ii. page 568) upon this subject, are expressed in language too indelicate to bear a literal translation, and therefore the original is given in a note.¹

¹ This is a strange observation. The remarks of Velpeau—whom, by the way, Professor Hamilton every where calls *Valpeaux*, although he evidently quotes from the original—are wholly free from indelicacy. They have been well rendered by Dr. Meigs of this city, but as we had not his version by us, we have translated them from the words of the author himself.

"The plan sanctioned by experience and reasoning is the following:—The hand naked, or, what is better, enveloped in a cloth, is placed across, so that its cubital margin corresponds to the point of the coccyx, its radial edge is beneath the anterior commissure of the perineum, and the free extremities of the fingers are placed between the labium and the thigh of one side, or extend as far as the nates, while the thenar and thumb, separated, are situated between the other labium and the thigh of the opposite side. The inclined plane, which the head must describe on the soft parts in issuing from the pelvis, is thus transformed into a solid wall: the hand is there as a continuation of the concave surface of the sacrum and coccyx, forcing the head to correspond to the axis of the vulva: the effort to be exerted must then act from behind forwards, from the coccyx towards the pudendum, and not in the inverse direction or laterally. The occiput must be made to rise towards the pubis, and not be prevented from descending; and, moreover, it is not until the moment when the head begins to distend the vulva with a certain degree of force that it is necessary to act; before this period the operation would be useless, and the accoucheur would merely prove that he did not comprehend its mechanism. By endeavouring to bend the fingers slightly, as has been advised, to bring the soft parts towards the median line, the hand becomes too concave, does not sufficiently support the head, and we aid precisely what we are desirous of avoiding: by placing the hands as others have recommended, in supination, vertically, the fingers towards the coccyx, and the wrist on the side of the vulva, we also fail in our object, because the efforts are then exerted with more facility forwards than backwards, whilst the contrary is desirable. Lastly, to prevent laceration as certainly as possible, we may, like M. Flamant, lay hold of the skin of the nates, or of the posterior part of the pelvis, with both hands, in order to bring it as much as possible forwards; it is well, important even, as soon as the parietal protuberances have cleared the level of the tuberosities of the ischium, to instruct the woman to restrain her efforts, instead of exciting her to force down more and more, as is too generally done. It is at this moment that

The method which the author has pursued and recommended for the last forty years, in cases of a first child, is the following.

From the time that the head of the infant clears the os uteri, the practitioner is to remain by the patient, and whenever the pressure upon the external parts begins, he is to make counter pressure every pain, by applying the right hand, without the interposition of a cloth, in such a manner as to support any part which is more than another on the stretch. In the intervals between the pains he is to apply fine lard to the perineum and labia, in proportion to the heat or rigidity of those parts.

As the orifice of the vagina opens, and a little more of the infant's head than the swelled scalp is pressed through the orifice during the pain, he is so to arrange the thumb and fingers of his right hand on each side of the vulva, as to secure due support to those parts, while with the palm of his hand he is to press forward the perineum towards the pubes. If the head be large, and the parts yielding slowly, he is enabled, by this mode of applying the thumb and fingers, to retard the progress of the infant's head, as well as to support the parts with which it is forced into contact. The patient should at this period of the labour be urgently requested to bear down as little as possible.

The practice thus suggested is so different in several particulars from that generally pursued, that the author feels it incumbent upon him to explain what he is led to believe its superiority.

Firstly, He advises, (what he has uniformly practised,) that from the time the infant's head is forced down upon the external parts, the practitioner should sit down to give assistance during the pains, and should on no account leave the patient for one moment. He is aware that this must upon many occasions impose a very fatiguing, and even painful, duty on the practitioner; but experience has convinced him, that in many cases the life of the infant and the safety of the mother depend upon the adoption of this rule. Thus, while the practitioner sits by and gives his assistance during every pain, his patient's spirits are kept up, as she expects that her sufferings are soon to be relieved, and although a prudent practitioner does not hold out this promise, the belief is strongly impressed upon her mind.

Cases do sometimes occur, where, after the infant comes to press on the perineum, the impatience or the fear of the sufferer becomes such, that a suspension or diminution of the uterine contractions takes place, and it might seem allowable for the practitioner to recruit his strength, by change of posture or by taking some refreshment. The consequences, however, of such indulgence, would certainly not unfrequently be most prejudicial. From the patient dreading a great protraction of her sufferings, the labour

the parts, taken by surprise, are lacerated, if the head forced down too rapidly does not give them time to yield and to mould themselves upon it. The more slowly the head passes through the vulva, the greater will be the chance of preserving the perineal septum in its integrity."

There is surely nothing indelicate in this.—*R. Dunglison.*

pains might cease altogether, and a labour that should have terminated naturally, might become fatal to the infant from the continued compression of the cord by the contracted uterus, and hazardous to the mother from the interrupted circulation through the linings of the pelvis. It is moreover possible, though not very probable in a first child, that while the practitioner is in another room taking refreshment, a strong long continued labour thro' might expel the infant at the expense of the laceration of the passages.

Secondly, In this method of supporting the perineum, the first deviation from the ordinary practice is giving support with the naked hand, and it is scarcely necessary to offer any arguments in favour of this practice, after what has been already stated. It is obviously impossible to afford the proper support if there be a cloth (however soft) interposed between the hand and the parts.

Thirdly, During the intervals of the pains, the author recommends the application of fine lard to the parts pressed upon by the head of the infant. Three advantages result from this practice, which seems to be at present little appreciated by the profession.¹ For, in the first place, the application of the lard in all cases of a first labour in this part of the world, tends greatly to relieve the sufferings of the poor woman. Secondly, there can be no doubt whatever, that if judiciously employed it contributes greatly to the dilatation of the passages; and, thirdly, a still more important effect is produced by this practice, viz., the prevention of swelling and inflammation of the vulva after delivery. The author can solemnly aver, that no patient of whom he has had charge, for at least thirty years past, has had any such consequence of labour, although he has often had occasion to make counter pressure upon the perineum for from five to nine hours.

Fourthly, In supporting the external passage, while every pain partially protrudes the head of the infant, the author advises the perineum to be forced forwards towards the pubes, a method which he has followed for above forty years. By this practice the stretching of the perineum is lessened, while the dilatation of the orifice of the vagina is facilitated.

Theoretical principles have led some of the latest French authors to recommend this practice,² but the position of the patient while in labour, in France, renders it impossible to attain this object, even although the practitioner follow the method advised by Velpeau, that of taking hold of the buttocks with the two hands and pressing the parts forward.³

It is well known that after a woman has once borne an infant, her sufferings are comparatively trifling in subsequent labours, after the head comes in contact with the perineum, if the infant be of the ordinary size and in the natural position. In such cases, it is even more imperative upon the practitioner to remain by the bedside of the patient, from the moment that the head clears the uterus

¹ Burns, eighth edition, page 365.

² *Vide* Velpeau, vol. ii., page 568.

³ *Ibid.* 569.

Instances have occurred where the perineum has been burst in consequence of the practitioner having withdrawn his hand during the interval of a pain, and on the occurrence of a strong uterine contraction, having so passed his hand through the bedclothes as not to bring it in contact with the perineum in proper time.

Unless where the head of the infant is very large, or in a malposition, or there has been a long interval between the pregnancies of the patient, there is not the same necessity for the use of the lard as in a first labour, in which the author very often has occasion to use a whole pound of that substance. But the same support, by means of the hand, is to be carefully adopted in every case of natural labour.

When the head is born, the practitioner is to examine carefully whether there be any loop of the cord round the infant's neck, that it may be speedily disentangled, and he is to wait for another uterine contraction by which the shoulders are to be accommodated, and the person of the infant to be expelled. While waiting for this, the access of air to the face of the infant is to be admitted, on which breathing generally commences, evinced by an imperfect cry. When the pain comes on, the perineum is to be supported with the left hand, and with the right the side of the infant is to be bent up towards the pubes. It is very seldom necessary to introduce the finger into one of the armpits.

In a natural labour the infant gives a loud scream when completely born, which establishes its new mode of living, and when this happens the cord may be safely tied and cut, but before doing this, the state of the abdominal parietes and of the uterus should be carefully ascertained, in order to determine whether there be another infant in utero.

MANAGEMENT OF THE THIRD STAGE OF LABOUR.

It may be unnecessary to remark, that by the third stage of labour is meant the separation and expulsion of the placenta and membranes, an operation effected in natural labour by the same simple means which had opened the passages, and had propelled the infant, viz., the contractions of the uterus.

After the birth of the infant (in natural labour) there is generally a suspension of uterine contractions for some time, varying from ten minutes to half an hour, during which the portion of the navel-string left adhering to the placenta, on detaching the infant, remain unchanged. By and by, the patient complains of a griping or grinding pain, and on taking hold of the cord, it will be found distended with blood (provided a ligature had been tied round it) and to have become lengthened. These circumstances generally

indicate the separation of the placenta from the surface of the uterus, and warrant the aid of the practitioner.

But before attempting to draw down the navel-string with this view, the practitioner must be quite certain that an actual separation has taken place, and for this purpose he is to carry up two fingers of the right hand along the cord at the anterior part of the pelvis, and if he do not easily reach its root, he is to conclude that it is still attached to the uterine surface, and that his assistance is not yet necessary.

The reason for this precaution can scarcely be misunderstood. If the cord be pulled by, while the placenta still adheres, that portion of the uterus not in contact with the sides of the pelvis may be more or less inverted, of which many deplorable instances might be cited.

On the supposition that the result of the examination is a conviction that the secundines are detached, the cord is to be twisted round the fingers of the right hand, and to be gently but steadily drawn down, favouring the direction of the vagina till the placenta be brought in contact with the external parts. It is then to be drawn gently upwards, the left hand being applied to support the perineum, and when it is partially protruded it is to be grasped by the right hand, and bent up towards the pubes, taking care to draw forward the membranes which are generally inverted over its lobulated surface. The French practice, that of twisting round the placenta four or five turns after its protrusion, will be found far less efficacious in securing the extraction of the membranes than the method thus suggested.

Now and then it happens that the placenta is so large that, after being separated from the uterus, it does not readily pass into the vagina. In such cases it becomes necessary to press, with two fingers of the left hand, the navel-string towards the apex of the sacrum, while with the right hand the cord is drawn forwards towards the pubes. This practice, however, is seldom required, although, by the writings of Bandelocque, Capuron, Gardien, Velpeau, and other French authors, it seems to be very indiscriminately had recourse to on the continent.

As cases occasionally occur where the placenta is not separated within the ordinary time after the birth of the infant, an important question has been agitated, viz., how long it may be proper to wait for the efforts of nature, provided no untoward circumstances occur, for both British and foreign practitioners cordially agree, that if hemorrhage, or syncope, or convulsions, supervene, not a moment's delay in extracting the secundines is justifiable.

On a practical subject of this importance, it must appear extraordinary that there should be still so much discrepancy of opinion among practitioners of the first respectability. Dr. Denman has expressed himself on this subject in the following terms (page 326, vol. ii.)—"We will say, leaving the matter at large for the exercise of individual judgment, that if the placenta be not expelled at the end of four hours from the birth of the child, it is generally wise to

determine upon extracting it—and the determination of choosing that time is, I believe, to be founded on the opinion that the parts have not closed since the expulsion of the child. I can, however, recollect many examples of a retained placenta, without a hemorrhage, to which I have been called at any time within twelve or even twenty-four hours after the birth of the child, in which the placenta has been very easily managed, when the exigencies of any care required it.

“In this place it is necessary to make another distinction. Though the placenta may be retained for many hours after the birth of the child, if we be convinced of some degree of descent, especially if we can feel that part of it into which the funis is inserted, we have no occasion to be alarmed, or to hurry its exclusion, unless there be an existing hemorrhage. Then the placenta may be suffered to remain till it is excluded by the action of the uterus, or, as it descends, the most gentle assistance may be given by pulling up the funis to extract it, without any apprehension of danger, whether it be detained two or even twenty-four hours, because we have at all times, under such circumstances, an easy and certain command of it.”

These observations of Dr. Denman seem to be founded on erroneous principles, and to be calculated to mislead young practitioners. To the author, indeed, they are intelligible, for he apprehends that they contain internal and unequivocal evidence that the cases where Dr. Denman supposed the placenta to have been retained, with impunity, for many hours within the cavity of the uterus, after the expulsion of the infant, were in reality cases where it had been retained in the vagina. He expressly says,—“If the placenta be not expelled at the end of four hours from the birth of the child, it is generally wise to determine upon extracting it; and the determination of choosing that time is, I believe, to be founded on the opinion, that the parts have not closed since the expulsion of the child. I can, however, recollect many examples of a retained placenta without a hemorrhage, to which I have been called, at any time within twelve, or even twenty-four hours after the birth of the child, in which the placenta has been very easily managed.”

It is impossible to put any other interpretation upon those expressions, than that they relate exclusively to cases of retention of the placenta within the vagina; for it is an undoubted fact, that when it is within the cavity of the uterus, the external parts and vagina contract so quickly, that even at the end of one hour after the birth of the infant, the vulva seems closed and the vagina feels thickened, and as time advances, those changes progress. But when the placenta fills the vagina, this process is necessarily suspended.

That the after-birth may be retained in the uterus for many hours without hemorrhage ensuing, the author well knows; but in all such cases decomposition of its substance, to a greater or less degree, takes place, and proves, as has been admitted by Dr. Denman himself, and by the profession at large, a source of great danger.

On the other hand, the retention of the placenta within the vagina for many hours after the expulsion of the infant, is not necessarily productive of the same injurious effects, for an obvious reason. Its lobulated surface is covered by the membranes of the ovum, which, precluding the access of atmospherical air, prevents any speedy decomposition, while the absorbents of the vagina are infinitely less numerous than those of the uterus.

Dr. Osborne, who for many years was a joint lecturer with Dr. Denman, and who deservedly attained high eminence in the profession, seems to have entertained a different opinion upon this subject, from his respected colleague, for he expressly says,¹—"Under no circumstances whatever ought the placenta to be permitted to remain in the uterus for any considerable length of time after the birth of the child." He has unfortunately not specified how long it may be safe to wait for the natural efforts.

It appears, from the observations of all the late French authors on midwifery, that there is no precise rule adopted on this subject by the continental practitioners. They all agree, that if symptoms of danger occur, the interposition of art becomes necessary; but the very circumstances which they enumerate as denoting danger, and warranting interference, mark that they wait too long for the exertion of the natural powers. Indeed, some of the most respectable foreign authors actually inculcate delay, in the extraction of the placenta, under circumstances which, in the author's opinion, require its immediate extraction. Thus, Baudelocque says (paragraph 928)—"If atony of the uterus, when accompanied with violent bleeding, requires the instant extraction of the placenta, a very different practice should be pursued where there is no such symptom. If there be no hemorrhage, no attempt should be made to separate the placenta, till the uterus recover its tone and contract naturally." Capuron says (page 331)—"When the placenta is retained by inaction of the uterus, or by the spasmodic contraction of its neck, or by morbid adhesion, any attempt at extraction should be delayed." And Mons. Gardien says (page 223, vol. iii.)—"The placenta should not be interfered with in cases where it is retained by a spasmodic or natural contraction of the neck of the uterus, nor in cases of plurality of children."

From the earliest period of the author's professional life, he was taught to adopt two rules in respect to the management of the placenta, viz., to interfere upon the very first threatening of hemorrhage, and, where there were no untoward symptoms, to wait no longer than one hour for the natural efforts. Every year's experience has strongly impressed his mind with the utility of those precepts.

With respect to the former of these rules, it seems to be duly appreciated by foreign practitioners; but many cases have fallen under the author's observation, and many communications have been made to him, which lead him to suspect that British practi-

¹ *Essays on the Practice of Midwifery, &c.*, page 38.

tioners, from their unwillingness to hurt the feelings of their patients by an appearance of officiousness, are often tempted to delay interference in those cases till the symptoms become urgent. This unwillingness to pursue active treatment may be readily explained. In some cases there is merely a trickling of blood; in other cases now and then there is a gush, or the discharge of a coagulum, and as no alarming symptom follows, the practitioner does not think himself warranted to take decided measures, being in momentary expectation that the contraction of the uterus will come on and expel the secundines. Thus time passes, and occasionally the anxious hope of the practitioner is fulfilled, the natural powers of the constitution completing the delivery. But it not unfrequently happens that alarming symptoms suddenly supervene, and that the tardy assistance of the practitioner proves to be unavailing.

It cannot, therefore, be too deeply impressed upon the minds of every person engaged in the practice of midwifery, that the effect of the loss of blood after the birth of the infant, whatever may be its quantity, must always be uncertain—and that it may rapidly sink the living power in some individuals, while in others it may give such a shock to the constitution, as shall occasion a broken state of health.

From these remarks it is not to be inferred that the author alleges that in every case loss of blood after the birth of the infant is a dangerous occurrence; for, on the contrary, he believes that it is often a salutary effort of nature to relieve the system, or to unload the uterine vessels. But it is to be recollected that such a discharge should be under the control of the practitioner, which it cannot be as long as the placenta is retained in the uterus.

It is on the latter precept that there is so much difference of opinion among the profession. If there be no untoward symptoms, it has been a general conclusion among British practitioners, that time and patience are all that are required. Dr. Ramsbotham (part i., page 142) says—"The practice, in cases of retention of the placenta, must be guided by future occurrences, not by present suspicions. We therefore wait in patient hope of the natural exclusion, until we are urged to the manual removal by time or danger."

Professor Davis expressly says, that "many cases are met with of retention of the placenta without hemorrhage, which terminate very satisfactorily in two or three hours, by a spontaneous expulsion of it, independently of any interference whatever."—(page 1061.)

It has been already stated, that the continental practitioners hold it to be their duty to delay the extractions of the placenta if there be no untoward symptoms.

On what principle, then, it may be asked, did the author, at a very early period of his professional life, adopt the rules of waiting no longer than an hour in any case (after the birth of the infant) before proceeding to extract the placenta? He answers, that it

was from a conviction that the introduction of the hand after that time must tend to excite inflammation of the passages, in consequence of the contraction and other important changes which follow the expulsion of the infant.¹

When, therefore, the secundines are thus retained, it becomes necessary to interfere, and the first object should be, to ascertain whether they be retained within the uterus or within the vagina. The certain method by which this can be decided has been already explained, page 85.

Three different circumstances may occasion this retention, viz: atony of the uterus; irregular contraction of the same; and morbid adhesion of the placental mass.

Atony of the uterus, retaining the placenta, is distinguished by several characteristic marks; such as the uterus, when felt through the parietes of the abdomen, communicating the idea of a large flattened sac, instead of a spheroidal body like an infant's head, the portion of the cord left adhering not lengthening, and there being no griping nor grinding pains. This state of the uterus is very seldom accompanied with hemorrhage, although foreign authors entertain a contrary opinion, and it is always to be attributed to some mismanagement of the first or second stage of labour.

The appropriate practice in this case is, to excite the contraction of the uterus. This is best done by the exhibition of a cordial; the application of heat to the lower part of the belly; and pressure upon the uterus by means of the hand. Occasional tugging at the navel-string is a common practice, but it is a hazardous one, and should not be sanctioned.

If the contraction of the uterus be not secured by the employment of these means within an hour after the birth of the infant, a stimulant enema ought to be administered, and should that fail, the manual separation becomes indispensable.

As to the second cause of retention of the placenta within the uterus, what British practitioners call the hour-glass contraction, and what is styled by the French, *Le Chatonnement*, both Dr. Denman and Dr. Ramsbotham seem to have supposed that there are no marks by which this cause of retention could be ascertained. Thus, Dr. Denman (page 332, vol. iii.) says—"There is no way of judging of this kind or degree of contraction, unless by the uncertain information we may acquire, by the application of the hand to the abdomen, till we introduce our hand into the uterus." Dr. Ramsbotham says (part i., page 148)—"The occurrence of this symptom (viz., the uterine hemorrhage), the elongation of the uterine tumour, and the impossibility of feeling the placenta, point out pretty clearly the nature of the case. Strong after-pains some-

¹ On this practical question he has much satisfaction in referring to the authority of Professor Burns, of Glasgow, who has been led to the same conclusion. In the first edition of his valuable work, entitled *Principles of Midwifery*, page 212, he recommended waiting for an hour and a half before proceeding to the extraction of the placenta; but in his second edition, page 287, and in his subsequent edition, he has restricted the time to one hour.

times make their appearance, but they prove of no avail towards the exclusion of the placenta. After a farther suspense, the abstraction of the placenta is found advisable, and, indeed, necessary to the safety of the patient. When the hand is introduced for this purpose, the cause of the detention is discovered."

In every case of hour-glass contraction which has fallen under the author's notice, the symptoms have been strongly characteristic, and were the following. *Firstly*, Although uterine contractions had followed the birth of the infant, there was no lengthening of the cord. *Secondly*, On feeling the uterus through the parietes of the abdomen, instead of its shape being spheroidal, like the head of an infant, it felt like two rounded bodies joined together, the one placed above the pubes, and the other reaching from the upper part of the former to near the navel. *Thirdly*, On pulling gently by the cord, it readily came down, but on being let go it receded with a jerk. He has seldom found this cause of retention complicated with hemorrhage, but he believes that, if timely assistance be not given, that symptom supervenes.

The hour-glass contraction is always the effect of mismanagement. If the first stage be unusually protracted, this state of the uterus follows delivery, as was exemplified in the case of the Princess Charlotte. But upon the continent there is an additional cause of this untoward occurrence, viz., the established rule of extracting the infant the moment the head is protruded, without waiting for the action of the uterus to expel its person.

For the purpose of remedying this cause of retention, an opiate enema should be first administered (providing there be no hemorrhage), and after half an hour, the practitioner should proceed to introduce his hand, guided by the cord, to overcome the constriction, to separate the placenta, and to secure the regular contraction of the uterus.

Retention of the placenta from the third cause, viz., morbid adhesion to the uterine surface, is the most frequent case which has fallen under the author's notice. Indeed, he can truly say, that for the last thirty years it is the only case of deviation from the ordinary progress of the third stage of labour which he has met with, where he had the charge of the patient from the beginning, and it appears to him that many of the cases, in which Capuron, Gardien, and other foreign authors, attribute the retention to inert action of the uterus, had been in reality instances of morbid adhesion of the placenta.

The symptoms denoting this cause of difficulty are, in the author's opinion, well marked, and yet they have not been specified by Dr. Denman nor Professor Davis; and Dr. Ramsbotham has averred that there are no such symptoms. He says (page 74, part i.)—"Adhesion of the placenta, to its uterine surface, is by no means an uncommon occurrence, but it can seldom be positively known until the hand is introduced for its removal."

Where the placenta morbidly adheres, a gush of blood follows the birth of the infant, uterine contractions succeed, each pain

being usually followed by another gush, while the uterus feels contracted into a round form, and yet there is no lengthening of the cord. In the whole course of the author's practice, he has only met with one case where these symptoms did not occur, and that case happened above twenty years ago.

This morbid condition of the placenta is met with in various degrees. Sometimes there is a thin film of osseous matter covering a portion of its lobulated surface. In other cases, along with induration and thickening of part of its substance, there are bony spiculæ penetrating a portion of the mass. More frequently a part of the placenta seems converted into gristle, being of a compact dense texture, and semi-transparent like melted horn. This is usually styled the scirrhus placenta, and constitutes the most alarming degree of the morbid change, for it has been found after death, that the substance of the placenta has been so blended with that of the uterus, as to render it impossible to separate the one from the other without destruction of texture.

Commonly, this morbid change is confined to a portion of the placenta, and in no instance, within the author's knowledge, has it extended to the whole. It seldom occupies more than a third of the general mass, and it does not seem to influence the health of the infant. In only one case the author found that it extended to the whole circumference of the placenta to the breadth of an inch. The middle part was of the natural texture. It was in that case that no hemorrhage followed the birth of the infant, and that the cause of retention was not understood till the hand was introduced into the uterus.

Some individuals seem to have a peculiar tendency to this unfortunate change in the secundines. Thus, it consists with the author's knowledge, that several mothers of a large family (*viz.*, women who have had ten or twelve children) had, in the course of their child-bearing life, incurred, three or four or five times, great danger from this circumstance.

Certainly the most remarkable case which he ever attended was that of a lady who, before marriage, having read a violent philippic against the employment of medical men in the practice of midwifery, stipulated with her husband (when she felt herself in the family way), that he should allow her to be in the utmost extremity of danger, before having recourse to the aid of any such practitioner. This lady had, in five successive deliveries, the adherent placenta, and on each of those occasions, by the time the author was called in, the pulsation at the wrists had ceased, and the danger was indeed imminent. She had a sixth child, and as the very respectable female practitioner who had hitherto attended her declared that she would not again take the responsibility of the case, she was (very much against her own feelings) put under the author's care. It so happened, that the whole process of labour proved, on that occasion, to be strictly natural.

Several of the patients who had suffered from this cause of retention of the placenta (which, by the by, is, in this part of the king-

dom, popularly called the after-birth growing to the side), have alleged that, during the latter weeks of pregnancy, they had felt a dull heavy pain towards one side of the womb. If this were the case, it would afford a strong confirmation of Professor Davis's conjecture (page 1062), that the cause of this morbid adhesion is "the consequence of an inflammatory affection of the parietes of the uterus."

But the author can truly affirm, that he has met with many cases of adherent placenta where there had been no previous pain in the side; and that, on the other hand, in several cases where patients had been in much alarm, in consequence of having experienced the pain alluded to, there proved to be no morbid adhesion.

These several conditions occasion considerable difference in the facility or difficulty in the management of the case. Where there is merely a thin film of osseous matter, the uterine contractions may suffice to separate the mass, but in the other degrees no effort of nature can avail.

When, therefore, the symptoms denoting adhesion unequivocally occur, the practitioner must proceed instantly to relieve the patient. For this purpose the navel-string is to be held by the left hand, while the right hand is to be carried up, guided by it to the placenta. Pressure is now to be made upon its substance, bringing its circumference towards its centre, and detaching leisurely and carefully all that can be separated by this manipulation. The separated mass is now to be extracted by pulling by the navel-string with the left hand, while the complete contraction of the uterus is to be secured by suitable pressure with the right hand, which ought not to be withdrawn from the cavity till its parietes are in close contact.

A most serious complication of this case is occasionally met with—viz: where unfortunately the navel-string has been torn from its insertion by some mismanagement. The first difficulty experienced under such circumstances is the passing of the hand into the uterus—for the fundus is apt to be forced down into the pelvis, while the os uteri is pressed forward towards the pubes. On carrying up the right hand, therefore, there is the risk of mistaking the upper part of the vagina, towards the sacrum, for the cervix uteri; and if the practitioner be at all rash, he may, under this impression, actually force his fingers through the vagina,¹ several instances of which have fallen under the author's notice.

This untoward mistake may be guarded against by directing an attendant to press firmly upon the lower part of the belly, while the operator is to carry up his hand, with its back in contact with the anterior part of the pelvis, till he get his fingers into the uterus.

¹ Perhaps Dr. Ramsbotham may have been led to his practice of using the left hand in extracting the placenta, from having witnessed some cases of this kind. If there be no navel-string to direct the operator to the uterus, the introduction of the left hand more immediately leads to the opening of the uterus than that of the right, supposing the woman lying on her left side.

After overcoming this difficulty, another presents itself—viz: that of distinguishing the mass of the placenta from the substance of the uterus itself. For this purpose, the whole extent of the cavity of the uterus must be carefully examined, and it will usually be found that a small portion of the substance of the after-birth is detached; but if this be not the case, the bulging out of a part which can be pressed upon without occasioning pain will lead to a detection of the seat of the after-birth.

In detaching the placenta under such circumstances, the same method as in the former case must be adopted; that is, the pressure for the purpose of separating the mass must be made exclusively upon the foetal surface; and when all the separate portions are detached, they are to be pushed down into the vagina, after which, as in the former case, the parietes of the uterus are to be forced into contact, and any coagula or remains of the secundines are to be scooped out in the course of withdrawing the hand.

The practice thus suggested is very different from that recommended both by British and foreign practitioners—for the mode of extracting the placenta in cases of morbid adhesion usually adopted, is, to insinuate the fingers between the substance of the after-birth and the surface of the uterus.

Thus, Dr. Denman gives the following directions (page 328, vol. ii.)—"We must proceed with the hand to the placenta, which may either adhere with its whole surface, or it may be partly or even wholly separated and lying loose in the cavity of the uterus. Should there be a total adhesion, we must search for the edge of the placenta on the outside of the membranes, cautiously distinguishing between the placenta and the uterus. When the edge of the placenta is raised, the further separation must be made with the blunt ends of the fingers; and the closer and firmer the adhesion, the slower the separation ought to be made—not proceeding rashly or affecting dexterity, but giving our heads time to guide our hands, as if the operation were performed under inspection. By slow proceeding, and by demurring a short time if we meet with more than ordinary difficulty, the separation will be perfected; or, when the greater portion is loosened, if we grasp it slightly in the hand, and bend it backwards, the remaining part will often peel from the uterus without trouble, but this requires much caution. Should the placenta be found partly separated, we must proceed in the same manner."

From several expressions in Dr. Ramsbotham's valuable practical work (part i.), it appears that he has adopted implicitly Dr. Denman's method. Thus, he says (page 75)—"Sometimes the placenta seems merely to retain its original attachment; it is readily separable by the hand, but it is not to be detached by uterine effort, nor can it be withdrawn by any moderate degree of force applied to the funis. At other times it is so firmly adherent, as almost to feel as if it constituted a part of the uterine structure itself; it is so strongly cemented to the uterine surface, that there is great difficulty in insinuating the fingers between the placenta and the uterus,

and even in distinguishing what portion felt by the hand is uterus, and what placenta; especially in a contracted uterus, where the hand has little room for action."

Again, in page 108, in detailing the particulars of a very interesting case, he says—"I had great trouble in separating the placenta with my fingers, it being attached nearly throughout its surface. I at length effected its entire separation and removal." And in page 117, in describing another interesting case, he says—"I found the placenta almost generally adherent to the uterus, and, as I proceeded in its separation, one portion seemed to be confined in, and adherent to, a corner of the fundus uteri. I had much difficulty in getting my hand into this contracted space, so as to insinuate my fingers between the placenta there attached and the uterus. I at length completed my object, and withdrew the placenta entire."

Mons. Baudelocque (paragraph 951) says—"If this method does not succeed, we must endeavour to separate a part of the edge of the placenta, in order to insinuate the hand under it; or we may pierce it with the end of the finger near the base of the cord, and finish its separation from the uterus by passing the finger all round behind it."

Capuron (page 337), after directing the method of introducing the hand into the uterus, for the purpose of extracting the placenta, says—"When some portion of the mass is felt to be detached, as is commonly the case, the fingers are to be gently insinuated at that part, and the placenta peeled off."

Gardien (page 231, vol. iii.) recommends the same practice. He says—"If a portion of the placenta be already separated, the fingers are to be carried from behind that portion, for the purpose of continuing the separation, by insinuating the hand between the surface of the placenta and that of the uterus. If no part of the after-birth be separated, its substance must be pierced by the fingers."

Against those methods of extracting the adhering placenta, the author has always urged the two following objections:—Firstly, The hazard of exciting inflammation on the surface of the uterus by the pressure of the fingers; and, secondly, The great risk of lacerating the substance of the uterus by tearing off a part of the placenta literally blended with it. The practice, which he has so long pursued and recommended, is well calculated to guard against both these dangers; for it neither tends to irritate the uterus, nor to detach any part of the placenta which cannot be separated with safety.

An objection to the practice thus inculcated may occur to inexperienced practitioners—that the portion thus left behind in such cases may prove dangerous. It is, indeed, a curious circumstance, that, while Baudelocque (paragraph 952) starts this objection—alleging that "the adherent portion remaining in the uterus might

¹ Young practitioners cannot read too attentively the cases of retained placenta from various causes and under various complications, so faithfully and graphically described by Dr. Ramsbotham, in his first part.

cause the same accidents as if the whole were retained"—he, in the very next paragraph, admits that "there are some cases where, far from persisting to extract the whole of the placenta, prudence requires that we should leave a portion of it to nature."

It is not upon speculative principles that the author has adopted this practice, and yet mere reasoning upon the subject might have suggested its safety and utility. If all the separable parts of the mass be withdrawn, the uterus must contract round the retained portion, which will prevent hemorrhage; and when the indurated part separates by the process of sloughing, the probability is, that it may be thrown off by the natural efforts—failing of which, its expulsion may be promoted by artificial means.

Accordingly, the author's experience has confirmed this anticipation. He has attended many cases where two, three, or more days have intervened between the birth of the infant and the separation of the adherent indurated portion of the secundines, and he never witnessed any untoward symptom, such as flooding or subsequent irritative fever. In one case, a mass weighing eight ounces was retained five days without occasioning any symptoms indicating danger.

When it is thus necessary to leave a portion of the adhering mass, the progress of the case must be carefully watched, and, particularly, the state of the lochial discharge must be examined at least twice a day, in order to ascertain when the sloughing of the retained portion is effected; for, whenever that happens, a strong purgative enema must be administered.

On this subject Professor Davis has given a very sound advice to young practitioners. He says (page 1063)—"The proper, and indeed the only safe practice to be adopted in such cases is, to withdraw, by careful detachment, all of the placenta that is found *not* morbidly adherent to the uterine parietes, leaving the diseased remainder to such kindly offices of nature as she may be competent to exert for their expulsion."

It is evident, however, that Professor Davis is not aware that the kindly offices of nature may be most beneficially assisted in such cases, as his subsequent remarks evince. "By the adoption of this prudent management," he says, "a very valuable proportion of cases have been known to terminate favourably by a very slow and gradual decomposition of the morbid remnants of the placenta, and final escape of them from the uterine cavity. This result, however, has not always taken place without much previous disturbance both of the uterine and general systems; but it is sufficiently gratifying and encouraging to know that the patient is likely ultimately to recover, after having been exposed to the extreme danger in which her previous situation had been involved."

From mismanagement, the placenta may be retained in the vagina, which, although it be seldom productive of immediate danger, is always to be regarded as an untoward occurrence. It must be admitted that Dr. Denman considered it salutary to allow the placenta, after being separated, "to abide in the vagina one hour

after it is voided out of the cavity of the uterus."¹ But his reasons for this advice were so purely hypothetical, that it has never been adopted by the profession.

When, therefore, by tracing the cord to its root, as already directed, the placenta is found to be in the vagina, it is to be forthwith extracted; and this may be generally effected by forcing two fingers of the right hand through its substance at the root of the cord, and drawing it forward in the proper direction. The author has met with a few cases where the contraction of the vagina was so strong that it became necessary to introduce the whole (right) hand, before he could accomplish the removal of the secundines. In those cases, one or more days had been allowed to elapse after the birth of the infant before the author's assistance was resorted to.

Sometimes the placenta, after being separated from the surface of the uterus, and having partially entered the vagina, is impeded in its progress by a sudden and strong contraction of the cervix and os uteri. The nature of this case is at once ascertained, by passing up two fingers of the right hand at the anterior part of the pelvis. A portion of the placenta is found evidently indurated by compression, while the root of the navel-string cannot be reached. It is not easy to explain what thus produces the contraction of the cervix and the os uteri, for it certainly happens where the labour has been conducted with the utmost attention and skill.

There ought to be no delay in proceeding to overcome this resistance, because the natural powers of the constitution seem to have no tendency to remove the spasm alluded to. This opinion is founded upon the fact, that the author has been called in to many cases where the placenta had been retained from this cause for many hours. In those cases it is necessary to introduce the right hand into the vagina, and to press up two fingers through the contracted parts to reach the root of the cord; when, by penetrating the mass, as in the former case, a sufficient command can be obtained to complete the extraction.

¹ Introduction to Midwifery, page 330.

APPENDIX.

REPORT OF EXPERIMENTS WITH THE STETHOSCOPE ON THE ACTION OF THE FŒTAL HEART, &c.

BY DR. JOHN MOIR,

ASSISTANT PHYSICIAN TO THE EDINBURGH GENERAL LYING-IN HOSPITAL.

16th September, 1833.—Ann M'Phail, second pregnancy, supposed to be eight months advanced. The stethoscope applied to the left side, evinced no *bruit de souffle*, but on the right side this was distinctly heard, and was synchronous with the mother's pulse, being 72 in the minute. A sound supposed to be that of the fœtal heart, beating 120 in the minute, was plainly perceived extending over a surface of about four inches square on the right side below the umbilicus. While listening to the sound, the infant moved pretty briskly, and the pulsations were increased 12 or 14 in the minute. This patient was again examined on the 22d September. The *bruit de souffle* was now heard on the left side, but it was more loud and distinct on the right, while, at the same time, the sound of the fœtal heart was perceived as at last examination, beating 130 in the minute. This woman was delivered of a living child on the 10th October.

Agnes Dixon, first pregnancy, 16th September, 1833, supposed to be eight months and a half pregnant, *bruit de souffle* distinct on both sides, very loud on the right, and synchronous with the mother's pulse, which was 80. Pulsations of what was supposed the fœtal heart to the number of 130 in the minute, and increased in frequency from the movements of the infant, were perceived in the median line below the umbilicus, extending nearly over the same space as in M'Phail. Delivered of a living child on the 21st September.

Barbara M'Intosh, second pregnancy, supposed to be eight months and a half advanced, 19th September, 1833. *Bruit de souffle* distinct on each side, and synchronous with the mother's pulse, which was 88. Pulsations to the number of 132 in the minute, supposed to be those of the fœtal heart, were perceived below the umbilicus towards the right side. At times, these pulsations were rather confused, in consequence of the *souffle* being heard at the same place. Delivered of a living child on the 23d September.

Janet Lothian, eight months advanced in her first pregnancy,

19th September, 1833. *Bruit de souffle* distinct on both sides, and synchronous with the mother's pulse, which was 72. Pulsations to the number of 132, supposed to be from the fœtal heart, were perceived below the umbilicus towards the left side. September 22d, *souffle* distinct on both sides, particularly on the left, synchronous with the mother's pulse, which was 94. Pulsations, supposed from the fœtal heart, in the same situation as the former examination, and numbering 126 in the minute. This woman was delivered of a living child upon the 10th October.

Bridget Tenton, eight months and a half in her third pregnancy, on the 29th September, 1833. *Bruit de souffle* distinct on each side, and synchronous with the mother's pulse, which was 88. Pulsations from what was supposed the fœtal heart perceived low down on the right side, numbering 132, and at one time nearly 150 in the minute. Delivered, October 4th, of a living child.

Christian Veitch, 19th September, 1833, not quite eight months pregnant of her third child. *Bruit de souffle* distinct on the left side, but not so on the right, and synchronous with the mother's pulse, which was 108. No pulsation from the fœtal heart. This woman was again examined upon the 22d September. *Bruit de souffle* not heard on the left, but distinct on the right side, and still more distinctly in the median line between the umbilicus and the pubes, and synchronous with the mother's pulse, which was 88. Fœtal heart supposed to be distinctly heard in the left inguinal region, and to beat from 132 to 140 in the minute. On a third occasion, viz. 23d October, this woman was again examined. *Bruit de souffle* heard on both sides. In the right side it was heard only over a limited space in a line with the umbilicus. The pulsations of what was supposed the fœtal heart were perceived in the same situation as at the former report, and were 144 in the minute. Delivered, 27th November, of a living child.

Mary Goodall, 25th September.—Pregnant with her second child. No sound could be distinguished over any part of the uterine region. Was delivered of a living child on the 2d November.

Ann Burn, 22d August.—*Bruit de souffle* on each side, but more distinct on the left, and synchronous with the mother's pulse; no other sound could be heard. The abdomen was much distended. Delivered, on the 23d, of a living child.

Jane Thomson, 22d August.—*Bruit de souffle* distinct on both sides, and synchronous with the mother's pulse, which was 120. The body of the infant being distinctly felt through the parietes of the abdomen at the fundus of the uterus towards the right side, the stethoscope was applied over what was supposed to be the thorax, and the heart was perceived to beat 144 in the minute. This woman was delivered of twins on the 24th August.

Eliza Glen, 22d August.—*Bruit de souffle* only on the right side, and synchronous with the pulse, which was 60. Supposed fœtal heart in a line with the umbilicus on the left side, beating 140 in the minute. This woman left the hospital undelivered.

Dr. Moir further states that he had examined many other patients

in the Edinburgh General Lying-In Hospital since the occurrence of the preceding cases, both before and during labour, and the results in all had been similar. The sounds have also, in most instances, been pretty readily recognised by most of the pupils in attendance, when tried during labour.

While still doubtful, from the result of the examination of the above mentioned cases, whether the sound which was considered to be that of the fœtal heart was really to be attributed to it or not, a case occurred on the 27th October, 1833, which seemed satisfactorily to settle the question. Having occasion to perform the operation of turning, and having, previously to the proceeding, administered a large opiate, Dr. Moir took the opportunity of the interval before it should act, to run home for a stethoscope. Knowing, from previous examination, the position of the infant, that instrument was applied over the part of the mother's abdomen where the fœtal heart was supposed to be situated, and the same sound was heard as in the cases previously examined; the only difference being that in this case it was considerably louder, owing probably to the absence of the liquor amnii. It beat 100 in the minute. The hand being now introduced into the uterus, had the effect of exciting a recurrence of the pains which had been suspended by the opium, and on reaching the infant's thorax, the pulsations were only 70. The stethoscope being now again applied as before, while the fingers continued in contact with the infant's thorax, the pulsations, as heard through the one, and felt by the other, were found exactly to correspond, and to be then 80. On the recurrence and during the continuance of the pain, the pulsations invariably diminished in frequency, but gradually became accelerated as the pains went off, and continued so during the interval.

On the 6th of May following, another case occurred, the investigation of which was attended with nearly similar results.

Dr. Moir having been sent for by one of the pupils, in consequence of his patient being very weak and faint from the loss of blood, which was ascertained to arise from the placenta being attached over the cervix and os uteri, the operation of turning was had recourse to, but, before doing so, the stethoscope was applied, and the fœtal heart heard towards the left side of the uterus, below the umbilicus, pulsating at from 120 to 130. Mr. Drew, the gentleman in attendance, though the first time he had examined the pulsations of the fœtus in utero, heard the sounds distinctly, and made the pulsations 120. On the introduction of the hand, the body of the infant was found lying towards the left side of the mother, with its right side towards her abdomen. The pulsations of the heart were 124, but during the next pain fell to 90. The reduction in the frequency of the action of the fœtal heart occurred during every pain, and continued for a short time subsequent to its going off, when it again rose to 120 or thereabouts, and continued so till the accession of the next pain. The reduction was not uniform. Once only it fell to 80. The sounds heard through the

stethoscope, at the same moment as the pulsations were felt by the fingers, always corresponded exactly.

Three additional cases of turning, in consequence of presentation of the placenta, have fallen under Dr. Moir's charge. In two of them the pulsations of the heart and cord were ascertained to correspond with the above, being about 120 or 130 during the remission of the pains, and reduced in frequency on their accession. The urgency of the third case prevented any accurate examination being made.

After recording the above facts, Dr. Moir thus expresses himself:—On a careful consideration of the above cases, it appears—

Firstly, That one of the sounds heard through the abdominal parietes and uterus by means of the stethoscope is that of the fœtal heart.

Secondly, That its natural pulsation, when the patient is not in labour, as ascertained in the Edinburgh General Lying-In Hospital, is about 120.

Thirdly, That those pulsations are subject to diminution in frequency on the application of compression by the action of the uterus, a circumstance of which Dr. Evory Kennedy, in his work on Obstetric Auscultation, has taken no notice.

This effect of the contractions of the uterus, acting indirectly on the circulation of the fœtus through the medium of the brain, may account for the fact that the pulsations of the heart are only about 60 in infants who do not breathe on birth, but in whom the circulation still goes on through the chord. While in the same degree as the balance of the circulation becomes re-established, in consequence of the removal of the pressure from the brain after birth, so do the pulsations increase in frequency, and the child become susceptible to external impressions, by means of which the process of breathing is established.

In corroboration of the above view, it may be remarked, that such cases more generally occur after severe or tedious labours—and moreover, that in them, when the balance is not quickly restored, it may not unfrequently be assisted by cutting the cord and allowing the escape of a little blood.

The other sound or placental souffle is always synchronous with the mother's pulse, and seems to be owing to the passage of the blood along the spermatic and hypogastric arteries, being generally heard equally well on both sides in the situation where they are known to run.

As one of the diagnostic marks of pregnancy, the stethoscope may be considered a valuable, though not infallible, addition to the other signs of that condition of the system, for cases occasionally occur, where, notwithstanding the most careful examination, doubts still remain as to whether it exist or not.

In two cases, where the patients were six months advanced in pregnancy, the fœtal and placental sounds were very readily distinguished. In one of them the girl was deaf and dumb, and unwilling to submit to much examination. The signs from the presence of

the areola, and the account of the case, were pretty conclusive, but the presence of these signs removed all doubt.

Dr. Spittal has, by the same means, been enabled to detect pregnancy in several cases. Once so early as between four and four and an half months. In one case the patient was examined at her own request, she being doubtful as to her own situation. Dr. Spittal declared her to be pregnant without having recourse to any other means, and was correct.

But that the stethoscope cannot be relied on as an infallible means of distinguishing pregnancy, is proved by the fact, that in some cases of real pregnancy the application of the stethoscope has discovered no sound, as happened in the cases of Goodall and Burn, previously narrated. In Goodall there seemed to be nothing to account for its not being heard. In Burn the great distension of the abdomen might be the cause.

Another girl of the name of Cubie was sent to the Lying-In Hospital, in order to have it ascertained whether she was pregnant. She was examined by the stethoscope for a considerable time, and in a variety of postures, but no sound could be heard. She was delivered about four months afterwards of twins, one of which was putrid.

In another case of suspected pregnancy, no sound could be heard with the aid of the stethoscope, but the girl subsequently acknowledged that she had quickened three days before.

The above communications from Dr. Moir were in the hands of the printer when he met with the following cases.

Mrs. Cecilia Robertson, about eight months pregnant of her fourth child, on the morning of the 1st January, 1836, fell violently on the floor.

Between nine and ten o'clock, an immense gush of blood from the vagina suddenly took place while she was standing, and continued to flow in a stream for some time, until she was put to bed. About mid-day, as Dr. Moir was accidentally passing, he was requested to see her, and found her very weak and faint, with pallid features, with a pulse at 120, and scarcely perceptible.

On examination, it became necessary to remove from the vagina a quantity of coagulated blood which completely filled it, the hemorrhage was discovered to be going on, and the vagina was again soon filled with another clot. The os tincæ admitted with difficulty the point of the fore finger. No placenta being perceptible, it was inferred that the hemorrhage arose from its accidental separation in consequence of the fall, but the symptoms were so urgent as to require immediate delivery.

From the unyielding state of the os uteri, it seemed impossible to pass the hand into the uterus, and therefore an attempt was made to push back the presenting part, viz., the head, with two fingers, and to hook down one of the feet of the infant, a practice recommended in such cases by Dr. Hamilton. This was with some difficulty accomplished, and a living infant was born at the end of

an hour. Considerable hemorrhage followed, but it was speedily checked, and the poor woman soon rallied.

Very early in the course of the operation, a loop of the cord was felt through the membranes, and the pulsations several times counted. They ranged invariably at from 130 to 140, except once only, when, during a period of ten seconds, they suddenly fell to the rate of 90 in the minute, there being at the time little or no uterine action.

P. S.—*January 8.* Both mother and child continue to do well.

Mrs. Bruce, a patient in the Edinburgh Lying-In Hospital, who supposed herself at the full period of pregnancy, was, at 10 o'clock, A. M. of Sunday, January 10, alarmed by a discharge of blood, which soon stopped, but recurred in the afternoon of the same day. She then mentioned that she had had for five days occasional threatenings. On examination, at 4 P. M., it was found that the vagina contained a quantity of coagulated blood, that the os tincæ was relaxed, and easily permitted the finger to pass through it, and that the placenta was presenting, but the discharge was trifling, and the pulse natural. At this time both Dr. Spittal and Dr. Moir felt the pulsations of the foetal heart to be from 132 to 136 in a minute.

At 8 P. M., the symptoms having become urgent, the operation of turning was commenced, previous to which, it was ascertained that the pulsations of the foetal heart remained as before. On passing the hand by the side of the placenta, into the cavity of the ovum, strong uterine contractions were excited. In the mean while, the navel-string was reached, and while Dr. Spittal applied the stethoscope to the abdomen of the patient, Dr. Moir counted the pulsations of the cord. They both ascertained that the pulsations amounted exactly to 60 in a minute; but suddenly they increased to about 120, of which both gentlemen became sensible at the same moment. They soon, however, fell again to 68. The delivery was quickly finished, and both mother and child were saved.

The placenta was of an unusual size, rather thin, and a part, to the extent of about the size of a crown-piece, was altered in texture, being indurated, and semi-transparent. It was this part which had been over the os uteri.

Dr. Moir adds to the above communication, that he saw, also on the 10th of January, a private patient who had uterine hemorrhage; and, on applying the stethoscope, he found the pulsations of the foetal heart to be 140. But his father, Mr. Moir, surgeon to the Edinburgh General Lying-In Hospital, in the course of delivering this patient (some hours afterwards), by the operation of turning, found the pulsations not to exceed 82.

PRACTICAL OBSERVATIONS

ON VARIOUS SUBJECTS RELATING TO

MIDWIFERY.

BY JAMES HAMILTON, M.D., F.R.S.E.,
PROFESSOR OF MEDICINE AND MIDWIFERY, &C., IN THE UNIVERSITY
OF EDINBURGH.

PART II.

PHILADELPHIA:
PUBLISHED BY A. WALDIE, NO. 46 CARPENTER ST.
1838.

ADVERTISEMENT.

In publishing this second part of his practical observations, the author deems it necessary again to state, that the object of the work is to put upon record those deviations from the modes of practice, in the department of midwifery, at present sanctioned by British and foreign practitioners, which a long and extensive experience has led him to adopt and to recommend.

The deviations alluded to, refer to subjects of the highest practical importance, and nothing but a most sincere conviction of their utility could have induced the author, at his time of life, to advocate doctrines which he is aware may be received with distrust and some degree of prejudice, particularly by practitioners long accustomed to the modes of treatment to which he has objected.

In detailing these deviations, he has candidly and fully explained the reasons by which he was led to their adoption, and has stated the facts by which he considers their validity to be established. These facts could, if necessary, have been verified by several of his respectable pupils and brethren, both in this city and in other parts of the kingdom, but he presumes that his status in the profession renders any such appeal quite unnecessary.

He feels conscious that he has not misrepresented the opinions of those respectable authors, to whose works alone he has made reference. Indeed, he has been particularly anxious upon this point,

and should this work reach another edition, if it can be shown that he has fallen into any the slightest error in this respect, he will have no hesitation in correcting it.

While contrasting his own mode of practice with that of others, he has, he trusts, expressed himself with every degree of courtesy and respect; but, convinced as he is of the importance of the deviations which he inculcates, he has not scrupled to express his opinions with a confidence which, in a less experienced practitioner, might be supposed unbecoming.

CONTENTS OF PART II.

	PAGE
Ordinary Management of Women after Delivery,	1
Laborious Labours,	13
Section 1st, First order of Laborious Labours,	23
Section 2d, Second order of Laborious Labours,	29
Section 3d, Third order of Laborious Labours,	37
Section 4th, On the Induction of Premature Labour,	54
On Preternatural Labours,	59
On Uterine Hemorrhage occurring during the Two Latter Months of Pregnancy,	68
Section 1st, Discharges before the Commencement of Labour,	<i>ib.</i>
Section 2d, Hemorrhage occurring during the first Two Stages of Labour,	87
Section 3d, Hemorrhage after Delivery,	89
Convulsions during Pregnancy and Labour,	92
Section 1st, Convulsions during the Latter Months of Pregnancy,	94
Section 2d, Convulsions during Labour,	99
Section 3d, Convulsions after Delivery,	105
Rupture of the Uterus during Pregnancy and Labour,	107
Section 1st, Accidental rupture of the Uterus,	<i>ib.</i>
Section 2d, Spontaneous rupture of the Uterus during Labour,	111

APPENDIX.

No. I. Cases of Cicatrix in the Vagina in consequence of Laborious Labour,	115
No. II. Copy of a Letter proposing a Substitute for the Cæsarean Opera- tion,	117
No. III. Cases of Convulsions referred to, page 98,	118
No. IV. Letters relating to the Action of the Fœtal Heart before Birth,	123

PRACTICAL OBSERVATIONS

ON

MIDWIFERY.

ON THE ORDINARY MANAGEMENT OF WOMEN AFTER DELIVERY.

In order to understand the appropriate treatment of women during lying-in, it is necessary to describe the condition of the system which follows the act of human parturition.

Considerable exhaustion, both of the muscular and of the sensorial power, must be the consequence of the exertions and the sufferings occasioned by the expulsion of the infant and secundines, and of course the degrees of this exhaustion must correspond with the violence and the duration of labour and the previous state of health of the patient. But in ordinary cases the debility is temporary only, and therefore the corporeal changes which follow the birth of the infant require the chief attention of the practitioner.

It must be evident, that when delivery takes place, the pressure upon the contents, and upon the containing parts of the abdomen, is suddenly removed, that the current of blood to the uterus is diminished or altered, and that the internal surface of that important part is literally studded with the extremities of ruptured blood vessels. Overwhelming hemorrhage would follow the separation of the secundines, but for the contraction of the womb. The effect of this contraction is such a thickening of its substance as not only to compress the trunks of the vessels which had run into the secundines, but also to occasion retraction and constriction of their ruptured extremities, the natural structure of which is well adapted for this purpose. Previous to labour, the thickness of the parietes of the uterus does not much exceed a quarter of an inch, but after delivery it is at least an inch and a half.

This natural process is exactly what surgeons imitate in the amputation of the limbs. By the tourniquet they compress the chief arteries of the part, they apply ligatures to the divided extremities of the larger branches, and they trust to compression for promoting the retraction of the more minute ruptured ramifications. These circumstances explain the faintings and the floodings which are apt on some occasions to supervene to delivery.

A discharge of blood, more or less considerable, generally follows the expulsion of the after-birth. This lessens in proportion to the contraction of the uterus, and that contraction can usually be without difficulty recognised by the application of the hand to the lower part of the belly.

The flow from the uterus gradually undergoes certain changes in its character and appearance, becoming first bloody serum, then milky-like or purulent, then greenish or brownish, with an offensive smell, and acquiring an acrimonious quality tending to excoriate the external parts, and finally, colourless and inodorous previous to its ceasing altogether. This discharge, technically styled the lochia (in vulgar language the cleansings), varies in appearance, in quantity, and in duration, not only in different women, but in the same woman in different lyings-in, and it never naturally ceases till the uterine system be restored, or nearly so, to its ordinary condition in the unimpregnated state.

After the shock occasioned by the violence of the labour has subsided, the current of blood is directed from the uterus to the mamme, and the secretion of milk begins, and this new function is commonly productive of a considerable disturbance of the general system, constituting what is called milk-fever, the violence and duration of which are influenced chiefly by the circumstance of the woman nursing the infant or discouraging the milk.

But the most important change in the frame of a lying-in woman has been hitherto disregarded, if not misunderstood by the profession, viz., the reduction of the uterine system to the condition in which it had been previous to impregnation.

Even the latest authors have attributed this wonderful change to the most trifling causes, such as mechanical contraction, pressure of the circumambient parts, &c.

Monsieur Murat expressly says, in his article on the Lochia, (vol. 28 of the *Dictionnaire des Sciences Médicales*, page 517),—"Ce viscère, (viz. la Matrice) débarrassé du fœtus et de ses dépendances, use des mêmes forces qui l'ont délivré, pour rentrer dans ses premières limites; mais cette réduction d'un volume très-grand à un très-petit, n'est jamais instantanée; avant qu'elle soit complète, il se passe un temps plus ou moins long. A mesure que la matrice revient sur elle-même, les vaisseaux qui pénètrent dans l'épaisseur de ses parois laissent d'abord pleuvoir des flots de sang qui s'échappent par leurs orifices encore béans; mais bientôt ces vaisseaux, se reserrant peu à peu avec cet organe et dans des proportions correspondentes, deviennent plus flexueux et leur calibre diminue; aussi le sang coule en plus petite quantité et est moins coloré; quelquefois, au bout de deux ou trois heures, il ne sort guère que des caillots noirâtres plus ou moins volumineux. La matrice continuant de revenir sur elle-même, les orifices de ses vaisseaux ne fournissent bientôt qu'une sérosité roussâtre, qui prend plus tard de la consistance, une apparence puriforme, une couleur blanchâtre, et acquiert une odeur particulière que l'habitude apprend à distinguer."

Dr. Ramsbotham has adopted this opinion. He says (vol. i. page

62), "A contractile effort is continued, which produces, from day to day, a still more perceptible diminution, and proceeds till the uterus has acquired its pristine size. Along with the contractile effort, we have a material abstraction of the vascular supply. By the assistance of these agencies the uterus is at length restored to a state, under which it is again capable of impregnation. Absorption has little to do in this part of the process.

"This contractile effort is, soon after delivery, and indeed for the first few days, attended with pain, which returns at long intervals, but gradually subsides; it is afterwards performed in so silent a manner that the patient is ignorant of its progress."

Practitioners who have thus explained the restoration of the uterine system to its condition in the unimpregnated state, have not been aware that, during pregnancy, there is a progressive addition to the actual substance of the uterus and vagina, which cannot be removed either by contraction or pressure. It must be by absorption, and for this purpose all the lymphatics connected with the organs in question, take on, from the moment of delivery, an increased degree of activity, and the effects of this new action are very different in different individuals. Since the object of this work is strictly practical, the author is anxious to avoid every discussion which can be regarded as controversial. He could have no difficulty in proving to Dr. Ramsbotham, that where the bulk of any part of the human frame is diminished by compression, the mechanical effect is an increased activity of the absorbents, as well as a diminished supply of blood.

Besides original differences in natural constitutions or habits, there is every reason to believe that those extensive changes after delivery are materially influenced by the state of health of the patient previous to pregnancy. In persons of a delicate feeble constitution, the return of strength, and the reduction of the uterine system, must proceed slowly and imperfectly, while in those of an inflammatory diathesis, the slightest circumstances must tend to produce altered determination of blood, and hence to excite inflammation in different parts, more particularly in those parts connected with the lymphatics of the lower extremities. In nervous and hysterical constitutions, various complications of disease are apt to occur.

Again, where there has been unusual suffering during labour, the ordinary changes after delivery cannot be expected to proceed in a healthy regular manner, because the exhaustion of sensorial power must more or less paralyse the minute internal actions of every part of the system. *Secondly*, the violent pressure to which all the parts concerned in the mechanism of labour had been subjected, must excite an unusual tendency at least to inflammation; and, *thirdly*, the long continued and violent action of the respiratory organs must not only render them liable to derangement, but by their influence upon the capillaries of every part of the body, must occasion an inequality of circulation that may prove highly injurious.

From this brief sketch of the changes which take place after delivery, it is obvious that in the treatment of lying-in women, the attention of the practitioner should be particularly directed to the state of the sensorial power—of the respiratory organs—of the contents and containing parts of the abdomen—of the progressive changes on the uterine system—and of the mammæ and the secretion of milk.

The altered condition, too, of the circulating mass requires attention, for it must be influenced partly by the absorption of the substance which had been added to the uterus and vagina during pregnancy, and partly of that of the milk which takes place, in a greater or less degree, in every instance.

These circumstances readily account for the difference in the recovery of different individuals during lying-in. Where the labour has been easy,—where the woman has been in robust health previous to delivery,—where she has been accustomed to a life of industry, and to regular exercise in the open air, if she escape flooding immediately after delivery, or febrile or inflammatory diseases during the first week, her recovery proceeds rapidly. But if she have been accustomed to idleness and to luxurious living,—have been much secluded from the open air; and, in short, have been habituated to the indulgences of the higher ranks, her recovery must go on slowly, for while there is such an increased susceptibility of impression of the nervous system, that the most trifling circumstances excite alarm or agitation, there is such a languor in the action of the lymphatics, that the reduction of the uterus proceeds tardily and imperfectly. In such individuals, too, diminished energy of the chylopoetic viscera is a common occurrence, and hence indigestion with all its consequences.

Women of that description, therefore, are liable, besides the ordinary accident of hemorrhage after delivery, to various nervous and sympathetic affections from which the healthy individuals of the lower ranks are exempted.

Notwithstanding these most important differences, there are certain morbid affections to which all women are for some time after delivery liable; such are faintings, floodings, sudden suppression of the lochial discharge, and inflammation of the contents of the abdomen, or of the thorax.

Having thus described the condition of the woman after delivery, the mode of treatment is next to be considered.

As soon as the placenta is detached, moderate and equable compression of the abdomen, by means of a suitable roller, ought to be made without delay. Where there has been great distension of the parietes of the abdomen, one or more cloths, folded up in the form of a compress, should be interposed between the binder and the lower part of the belly, for the purpose of making steady pressure upon the uterus.

The importance and the utility of this practice must be so obvious, that it is wonderful it should ever be dispensed with, and yet, in many parts of England, there is reason to believe that it is not

adopted. Nothing but deference to the high authority of the late Dr. Denman can account for this, because any medical practitioner of common understanding, if left to the unbiased exercise of his own judgment, would see at once, not merely the utility, but the absolute necessity of this practice.

Dr. Denman says (page 437), "Some years ago it was a general custom to bind the abdomen very tight immediately after delivery, with the view of aiding the contraction of the integuments, and of preserving the shape of the patient. In some countries,—India in particular, this is practised to a degree that one cannot think of without shuddering at the mischief which must of necessity be very often occasioned. In this country, the practice has been very much discountenanced, as useless and pernicious, and it is now wholly or nearly laid aside, till five or six days after delivery, when a broad band, daily, but very gradually drawn a little tighter, may be applied, not only without injury, but with some advantage."

It is a most extraordinary circumstance, that Dr. Denman, in the very next paragraph, admits, "that one of the first and not an uncommon consequence of delivery, is faintness," and that "this may proceed from sudden emptying of the abdomen and its consequent changes."

That surgeons, after the operation of tapping for ascites, deem it necessary to compress the abdomen is indisputable, and the reason for the practice is a dread of faintness from the sudden emptying of the abdomen. It must appear, therefore, that after the act of human parturition, there should be the same necessity for supporting the parietes of the abdomen. But there is an additional, and still more important object to be attained by this practice, and that is, securing the due contraction of the uterus, in order to prevent hemorrhage upon the principles already stated.

Experience has led Dr. Ramsbotham to a due appreciation of the importance of assisting the contraction of the uterus. His observations, (part i., page 186, *et seq.*), are most valuable, and cannot be too strongly impressed upon the mind of every young practitioner.

While Mons. Marc recommends this practice, he does not seem aware that the continued compression of the abdomen, till the woman recover entirely from lying-in, seldom fails in healthy individuals to restore in a great degree the elasticity of the abdominal parietes. He says, (vol. vii., page 157 of the *Dictionnaire des Sciences Medicales*.)

"Les parois du bas-ventre restent souvent flasques, pendantes après l'accouchement. On observe chez le plus grand nombre des femmes, des rides, des vergetures, ces dernières doivent être considérées comme de vraies varices des veines cutanées de l'abdomen. La dilatation excessive qu'elles acquièrent pendant la grossesse, leur fait perdre leur ton naturel. Pendant longtemps on a regardé les astringens, les spiritueux, comme des moyens propres à disposer ces parties à reprendre leur élasticité naturelle; mais l'expérience prouve qu'on n'en obtient aucun effet marqué."

But the result of the author's experience is very different. Where suitable attention has been paid, the relaxation of the parietes of the abdomen has always been removed, and in several cases where, from neglect and mismanagement during successive lyings-in, the individual had such a state of the belly that the parietes hung over the pubes like an apron, keeping up a constant irritation and excoriation on the surface of the groins and upper part of the thighs, he has succeeded in removing that unseemly and uncomfortable condition of the person after a subsequent delivery, by means chiefly of stimulant frictions and pressure.

While confined to bed, any ordinary binder that shall give firm support to the whole belly from the ensiform cartilage to the pubes will be found sufficient. In applying this binder, the patient's body-dress may be shifted in ordinary cases. When the woman begins to sit up, a well adapted belt, with whalebones behind, and straps and buckles before, ought to be worn, not only till the uterine system be restored to its natural state, but also till the patient can walk without feeling weakness of the back.

In this part of the world, every woman, whatever her rank may be, remains in the bed on which she had been delivered, for at least twenty-four hours, and, of course, certain means are employed to render the bed comfortable. The state of the bedding must be regulated by the season of the year. It can scarcely be too light. Much danger must be incurred (at least in many cases) by the practice alleged to be common upon the Continent, of removing the woman from one bed to another immediately after delivery.

After a warm cloth has been applied to the external parts (to be renewed occasionally as it becomes soiled), the patient is to be allowed some mild nourishment, such as panada, or gruel, or sago, or some other farinaceous matter, or tea, with toasted bread, and should be encouraged to compose herself to rest, under the surveillance of a skilful attendant.

Directions are to be given that the patient make water as soon after delivery as circumstances will permit. For this purpose, she must be requested to turn round upon her knees, by which any coagula accumulated within the vagina will be readily expelled. Much injury has in many cases, according to the experience of the author, arisen from inattention to this apparently obvious and simple precaution.

Every woman in the better ranks ought to be visited within a few hours after delivery. At that visit it is proper that the general directions for her treatment should be minutely explained, and it is expected that she be seen at least daily till her recovery is established. The practice in the lower ranks must be adapted to the circumstances of such patients. No conscientious practitioner can feel satisfied with paying only a single visit after having delivered a person of that description.

The first circumstance to be insisted upon is, quiet, in every sense of the word, and all the ordinary precautions for securing this ought to be suggested. The higher the rank of the patient,

the more necessary it is to be particular in enforcing attention to this point. While every thing which can possibly make an injurious impression upon the senses of hearing or seeing should be carefully guarded against, there are two errors in this respect which are apt to be omitted. The one is, whispering instead of speaking in an under tone, and the other is, keeping the room darkened, instead of being merely shaded from the glare of light.

From the moment of delivery, it is of the utmost importance to attend to the state of the nervous system. In some individuals, slight circumstances increase in a wonderful degree their susceptibility of impression; and if this be overlooked, very serious consequences follow.

This increased susceptibility may be readily distinguished by a little attention. The action of the heart and arteries is accelerated, the slightest degree of light or noise affects the eyes or ears, symptoms which are aggravated by the approach even of the medical attendant; the sleep is disturbed by unpleasant dreams, and while awake, the patient is unquiet and restless. It may be added, that the most trifling emotion is apt to produce chilliness or burning heat of the surface, or headache, and, in some individuals, even delirium.

Various means are required to prevent or to remove this increased susceptibility of impression, but in the greater number of cases it will be found that the following treatment answers the purpose:—

Instead of the farinaceous diet, which in ordinary cases ought to be enjoined for the first few days, chicken broth or boiled chicken ought to be recommended, and even, in some cases, a moderate proportion of diluted wine.

Any attempt at suckling the infant should be discouraged, for, in certain constitutions, the drain of milk, independent altogether of the fatigue, is apt to occasion very serious nervous affections, such as melancholia, &c.

Six or eight hours of uninterrupted sleep every twenty-four hours should, if possible, be procured. For this purpose, the various preparations of opium, of hyosciamus, of camphor, of the volatile alkali, of the nitrous ether, of hops, of snake-root, and of valerian, must be prescribed, according to the constitution and habit of the individual. The musk and castor, formerly so extensively employed, have now fallen into disrepute. But in cases of violent palpitation of the heart, the musk will be found superior to every other medicine, provided it be administered in a sufficiently large dose. The author has invariably prescribed, in similar cases, two scruples—that is, forty grains—as the smallest dose.

Until the end of a fortnight at least, a dose of camphor, or of the volatile alkali, combined with the nitrous ether, should be given every two or three hours while awake; and whenever there is any threatening, either of change of temperature upon the surface, or of agitation of the mind, immediate measures should be adopted to arrest the progress of such symptoms.

As soon as the reduction of the uterus is sufficiently advanced, a course of tonics, adapted to the constitution of the patient, should be prescribed. In general, however, it will be found that the myrrh is the best tonic in such cases.

Ventilation is the next circumstance to be attended to. The air which surrounds a lying-in woman ought not only to be as pure as possible, but ought also to be kept at a very moderate temperature. It should never exceed 60° of Fahrenheit's scale—that is about $12\frac{1}{2}^{\circ}$ of Réaumur.

Sufficient attention, according to the author's opinion, has not been paid to this precept, and yet a little reflection must show its great importance.

From the shock which the respiratory organs had sustained during the act of parturition, they must be highly susceptible of impurities of the air; and from the excited state of the capillaries from the same cause, heated air cannot fail to prevent their restoration to their natural condition. It may be therefore truly said, that impure and heated air has been a principal cause of those diseases of debility, which in former times, in Great Britain, were so prevalent during lying-in, and which were alleged to be evidences of a putrid diathesis.

Personal cleanliness is much more necessary than might be supposed. The exudation on the surface which naturally takes place for a longer or shorter time after delivery, is not only of a deleterious nature, but is also apt to produce injurious effects, in consequence of the increased susceptibility of the superficial respiratory nerves.

In general, frequent changes of bed and body linen are sufficient for this purpose, but wherever there is any apparent febrile or irritated state of the system, the whole surface of the person should be carefully bathed, by means of a sponge, with tepid vinegar and water, at least evening and morning, for the first few days, carefully drying one part before bathing another.

As soon as the patient can bear the fatigue, the external parts are to be bathed with warm milk and water, and afterwards as long as there is any uterine discharge the same parts are to be daily sponged with warm spirits and water, in the proportion of one part of proof spirit to two parts of water. This practice has been objected to by Mons. Marc, in the article already referred to, in the following words:—

“ Dans les premiers jours, les lotions astringentes ou spiritueuses, auxquelles on a recours pour reserrer les parties génitales, seraient dangereuses; elles augmenteraient la douleur, et pourraient supprimer les lochies. On ne peut les employer sans inconvéniens, qu'après la cessation complète de l'écoulement des lochies. Pour les conseiller, même à cette époque, il faut que la femme reste sujette au relâchement du vagin ou à une descente de matrice.”

Experience has completely established, according to the observation of the author, the fallacy of this reasoning. He has never known the lochial discharge arrested by any stimulant or astringent application to the external parts. But he has invariably found that

such applications contribute in an essential degree to the restoration both of the uterus and of the vagina (with its external extremity) to their natural healthy condition in the unimpregnated state. He was led to the practice by reasoning, for he considered that such is the sympathy between every part of the uterine system, that stimulants applied to the absorbents of one part must influence the absorbents of the whole, and he has not been disappointed in the result of this reasoning. For many years past he has annually seen numerous cases of chronic enlargement of the uterus, relaxation of the vagina, &c., with all the unpleasant complaints attendant upon such a state of those parts, which, according to his firm belief, were the consequence of the neglect of this simple practice.

The diet of lying-in-women requires particular attention. When the patient has been in previous good health, and her labour has been natural, regard must be had to her ordinary mode of living, and to the circumstances of her suckling her infant or discouraging the milk.

Mild, easily digested food must be selected, and every thing stimulant or irritant must be prohibited. It is obvious that, where there is an inflammatory diathesis, and while the commotion excited by the act of parturition, and by the beginning secretion of milk, continues, nothing but farinaceous diet should be allowed.

Warm diluents, whether in the form of infusions or decoctions, or soups, are in general injurious for the first fortnight. They tend to increase the mass of circulating fluids, and, at the same time, to relax the skin, and to oppress the chylopoietic viscera. Whether the woman give suck or discourage the milk, her diet should consist as much as possible of dry food, for a certain time at least.

After the tenth or twelfth day, the restrictions in diet may be relaxed according to circumstances,—that is, the proportion of animal food may be increased, and wine or other fermented liquors in moderation may be permitted, if the patient suckle her infant, or if the delicacy of her constitution require nourishment and tonics. It may, however, be laid down as a general rule, that, till the lochial discharge cease entirely, and other evidences of the reduction of the uterus to its natural state take place, the mildest articles of food should be insisted upon. There are many cases upon record, attested by men of great integrity and competent knowledge, where indigestible substances received into the stomach have suddenly produced the most alarming effects.

In Britain this has been remarkably illustrated in the case of the lower ranks in great manufacturing towns; for instances annually occur, amongst patients of that description, where indulgence in indigestible viands and malt liquors is followed by fatal diarrhœa or cramp of the stomach.

The next direction to be given should relate to the evacuations from the bowels, and the author has reason to believe that the importance of attention to this point is not sufficiently appreciated by practitioners, and especially by foreign practitioners.

During the latter months of pregnancy there is a natural tendency

to torpor of the bowels. This is probably owing to that increased power of the digestive organs, by which the nutritious parts of the food are assimilated, and by which no other than the earthy portions are rejected, rather than to the mechanical pressure of the uterus upon the abdominal viscera, an opinion formerly adopted by many respectable authors.

Whether this reasoning be admitted or not, the fact is certain, that in all women, but especially in women of the lower ranks, an accumulation of hardened fæces in some degree or other is apt to take place previous to delivery; and although the contents of the rectum are mechanically expelled in the progress of the birth of the infant, accumulations in the colon, and especially in the caput cæcum, very frequently remain.

When it is further considered that, from the moment of delivery, an absorption of what had been added to the uterine system takes place, as already explained, and that this absorbed matter must be thrown off by the ordinary emunctories, the absolute necessity for regulating the actions of the bowels cannot for a moment be doubted.

Two objects are to be kept in view in fulfilling this indication, viz.—to remove accumulated fæces, and to stimulate the lymphatic system, by producing an increased discharge from the surface of the intestinal canal.

Much misapprehension appears to prevail respecting the selection of medicines, which promote the peristaltic action of the intestines, and yet it is understood that all such medicines produce two effects, for they increase the secretions from the surface of the bowels, and they excite the action of the muscular fibres of the gut. It is also well known, that some medicines act principally in one of those respects. For example, certain neutral salts increase greatly the secretion from the surfaces of the bowels, while castor oil probably does little more than stimulate the intestinal fibres. Some medicines, too, seem to have a specific influence on particular portions of the alimentary canal. Rhubarb, for example, acts upon the duodenum, and aloes upon the great guts. Without attention to those effects of aperient medicines, it is impossible for a practitioner to decide upon those which ought to be directed in the case of lying-in-women, but there are some general rules, by the adoption of which, the ordinary errors committed in this respect may perhaps be avoided.

Firstly, Unless it be unequivocally ascertained that the bowels have been regularly cleared previous to delivery, a dose of castor oil or of aloes, combined if necessary with some narcotic, ought to be given as soon as the woman has recovered from the shock of labour, and the appearance of the evacuations should be particularly examined.

Secondly, If any indurated fæces be expelled, evincing that there had been an accumulation in the great guts, the same medicine should be continued every eight, or ten, or twelve hours (assisted if necessary by preparations of senna), till it be clearly ascertained that the bowels are completely unloaded.

Thirdly, After the alimentary canal has been thus cleared, it is

only requisite to secure a daily evacuation, if the woman suckle her infant, unless the reduction of the uterus to its natural size in the unimpregnated state proceed tardily. In that case (viz. where the reduction of the uterus is tardy) some medicine calculated to produce, in the course of its operation, four or five copious evacuations, of such a nature as to denote an increased secretion from the surface of the intestines ought to be prescribed every second, or third, or fourth day, according to circumstances. Combinations of rhubarb, with the compound powder of jalap, and the compound tincture of senna, are in general the appropriate medicines for such cases. But in some individuals, other combinations of purgative medicines are required.

Fourthly, If the woman be not to suckle her infant, she ought to have, every second or third day, according to her strength, till the secretion of milk cease, and the tension of the mammæ subside, a dose of some purgative calculated to produce several loose chylous evacuations; and for this purpose, combinations of rhubarb, or senna, or colocynth, or scammony, with neutral salts, or other aperients adapted to the individual case, are to be prescribed.

Covering the surface of each mamma with some gently stimulant liniment (in those cases where the milk is to be discouraged), not only relieves the unpleasant feeling of tension, but also promotes the absorption of the milk. The preparation recommended by the author is, one ounce of unbleached bees-wax, two ounces and a half of fine olive oil, and two drachms of pure honey, melted together.

That much variety of opinion has prevailed amongst authors of the first respectability, in regard to the time at which the infant ought to be applied to the breast, in cases where the mother undertakes the natural duty of suckling her infant, is not wonderful, because there is no general rule applicable to every individual case. Indeed, there is no point perhaps upon which practitioners have so much differed.

An explanation of the various circumstances attending the secretion of milk, is the only guide by which this important matter can be regulated, and according to the author's opinion, this has never yet been sufficiently detailed.

There is ordinarily during the later months of pregnancy a certain state of the mammæ indicating the incipient formation of milk; but in a first pregnancy, the lactiferous ducts are apt to be impervious, and hence no discharge issues from the nipples. In subsequent pregnancies, however, especially if the woman have suckled her first infant, exudation from the nipples daily takes place for a week or two, or more, previous to delivery.

On theoretical principles, therefore, it might be concluded, that in the former of those cases, the infant ought to be applied as early as possible after its birth, in order to prevent an engorgement, while in the latter case, the spontaneous discharge from the nipples, must relieve the breasts, and prevent any unpleasant tension. Accordingly, experienced nurse tenders in Britain are generally directed by this rule. They consider that, if the nipples have not

been free, as they call it, before delivery, the infant cannot be applied too soon; whereas if the nipples be open, it is unnecessary to apply the infant sooner than may be consistent with the feelings of the patient.

Plausible as this reasoning may appear, it is most fallacious, that is to say, in actual practice it is found to be most injurious. The sympathy between the *mammæ* and the uterus has been totally overlooked, and yet it is perhaps more obvious in the puerperal than in any other state of the system. Indeed, every old nurse well knows that whenever the infant is applied to the breast for the first three or four days after delivery, an increased discharge from the uterus, or an aggravation of after-pains happens, according as the patient is lying-in for the first time, or has had a family.

This effect of suction of the *mammæ* is most prejudicial in all cases of relaxation of the uterus, and in all cases where increased susceptibility of impression has preceded or followed delivery. Alarming floodings or distressing nervous affections are apt in such cases to follow the too early application of the infant.

Many respectable authors, who entertain a contrary opinion, have urged that the infant may suffer if it be not permitted to suck its mother soon after birth. Mons. Gardien, for example, alleges,¹ that "the milk first secreted called colostrum, is well calculated to cleanse the bowels of the infant;" and others, with more probability perhaps, allege that the instinct of sucking is lost if not indulged within a few hours after birth. But there are many mild laxatives which may be given with safety to the infant, and the instinct of sucking may be readily preserved by means of the sucking bottle.

No invariable rule, it must be obvious from the above considerations, can be adopted in regard to the time at which the infant may be permitted to suck its mother, This matter must be regulated entirely by the discernment of the practitioner.

With respect to the time at which the woman should be taken out of bed, and particularly should be permitted to make the exertion of sitting up, or standing, or walking, that must be regulated entirely by the state of the uterus and of the lochial discharge, as well as of the general strength of the individual.

So long as the uterus continues bulky, in other words, so long as the enlarged uterus can be felt by applying the hand to the lower part of the abdomen, any attempt at the erect posture would not only be productive of painful bearing down, but would also tend, by the mechanical pressure, to interrupt the process of absorption of the uterine system. Many of the deplorable cases which occur among the lower ranks, in consequence of their imprudent exertions soon after delivery, and which must be familiar to every practitioner who has visited individuals of that description, furnish a strong illustration of the importance of attending to this precept.

During the flow of the red lochia, it is quite evident that any exertion in the erect posture might excite an injurious or even an

¹ Vol. iii. p. 461.

overwhelming discharge. Several cases have fallen under the author's observation, where excessive hemorrhage has been excited at the distance of even ten or twelve days after delivery, by a sudden jump out of bed, in consequence of agitation of the mind.

But besides, even after the chance of hemorrhage from the change in the condition of the lochia may be considered to have passed away, the exertion of standing or walking may, as already stated, stop the progress of absorption of the uterine system, and may, in consequence, be productive of acute or of chronic affections of all the parts contained within the pelvis, and even, by sympathy, of the lower extremities.

It may therefore be laid down as a general rule, that no woman should be allowed to sit up, or to stand, or to walk, so long as the uterus is bulky, or so long as the lochia continue to flow. A great diversity in these respects will be found to prevail in different individuals, in so much, that in some, any exertion may be permitted at the end of a week after delivery, while in others the same liberties cannot be allowed for a month, or even longer.

ON LABORIOUS LABOURS.

By this term, British practitioners commonly understand cases where, although the head of the infant be forced foremost, more than usual pain and difficulty are encountered. But as it is not easy to estimate in any given case, those degrees of pain and difficulty which constitute a deviation from the usual sufferings, it has been agreed to adopt the duration of the process as the mark of distinction, and hence in all cases where (the head of the infant being the advancing part) the labour is protracted beyond twenty-four hours, the case is termed difficult or laborious.¹

Before the importance of limiting the duration of the first stage of labour to twelve or fourteen hours was understood, this conventional definition of laborious labour was not only proper but necessary, as furnishing a salutary check to the importunities of the patient or attendants, and to the impatience of the practitioner, and perhaps till the proper management of the first stage, as recommended by the author, (Part i.,) be universally adopted, this definition ought to be retained.

But in making this concession, the author feels it incumbent upon him to declare, that when the uterine contractions proceed

¹ Denman, vol. ii., page 2.—“ This definition, which is chiefly taken from time, is liable to some objections, as there may be more pain endured, and greater difficulty surmounted by one woman in six hours, than by another in twenty-four; but on the whole, it will be found to apply to practice in an advantageous, and often in an unexceptionable manner. It will, in particular, afford a remedy for impatience, and guard the practitioner, in some measure, from premature attempts to give assistance, without incurring the danger of those evils which might be apprehended from too long delay.”

regularly without decided interruption, or when the infant, after the rupture of the membranes, remains in close contact with the passages, the sufferings of the woman should almost never be allowed to continue longer than twenty-four hours, reckoning from the beginning of true labour throes.

He is aware that this doctrine is much at variance with that of many of the most respectable of his professional brethren, and therefore it is incumbent upon him to explain the reasons which have led him to adopt it.

In the *first* place, he assumes that he has already proved both the utility and the practicability of limiting the duration of the first stage of labour to twelve hours.

Secondly, Experience has convinced him, that an attentive practitioner can have no difficulty of ascertaining, within the remaining twelve hours, whether the natural powers be adequate to the safe accomplishment of the delivery, and of deciding upon the appropriate treatment to be adopted.

The records of public hospitals show, that cases occasionally occur where, after the completion of the first stage of labour, the uterine contractions become suspended or ineffective for hours, and yet the patient is eventually delivered with safety after a protracted suffering of perhaps two days or more. But his conviction is, that in all such cases there had been no injurious pressure on the parts in contact with the infant.

Taking the term laborious labour in its usual acceptation, such cases must terminate in one of three ways; for the natural powers may at last safely expel the infant, or, while they fail to do so, the practitioner may be able, by artificial means, to relieve the woman, and to preserve the infant, or it may be impossible to extract the infant alive through the natural passages. These three different terminations have suggested a subdivision of laborious labours into three orders, an arrangement which tends much to elucidate the appropriate practice.

When labour (with the head of the infant advancing) is protracted beyond twenty-four hours, the sufferings of the woman are always more or less distressing. Increased action of the heart and arteries, with febrile heat and thirst, headache, restlessness, and despondency first take place. By and by, the strength fails,—the belly is first pained on pressure, and then swelled—the passages become tender to the touch—the features shrink—the breathing is affected—vomiting is apt to occur, followed by delirium, or convulsions, or death. In cases where the labour throes are violent, and the resistance is great, the poor woman's sufferings are liable to be suddenly aggravated by the rupture of the uterus.

That this is a real representation of the consequences of protracted labour must be acknowledged by every practitioner who has devoted himself to the department of midwifery, and is most strikingly illustrated by Dr. Collins's valuable record of the cases which had occurred in the Dublin Lying-in Hospital during his mastership. The first duty in all such cases, therefore, is to ascertain

how long it may be safe to trust to the natural powers, or, in other words, to decide whether the case should be classed under the first, or second, or third order of laborious labours.

For this purpose, the previous history of the patient—the duration of labour—the situation of the infant's head—the apparent effect of the labour throes—the condition of the passages, and the state of the general system of the woman, must be severally taken into deliberate consideration.

Firstly, The previous history should relate both to the age and to the state of health of the individual. It must be obvious, that young and healthy women can bear with impunity, a protraction of labour which would prove injurious to elderly or delicate women.

Secondly, The duration of labour is the great mark by which it is usual for the patient and attendants to consider that artificial interference is required. But this is a most fallacious test for several reasons. As spurious pains not unfrequently precede real ones, even in a first pregnancy, and are common occurrences in women who have had a family, it may be supposed that the patient has been three or four days in labour, when perhaps she has not been as many hours. Besides, some individuals suffer little from a considerable protraction of labour, as the records of the great lying-in hospitals upon the Continent and in Dublin amply testify. The duration of labour, therefore, is only to be considered as a collateral circumstance.

Thirdly, The situation of the infant's head in respect both to position, and to its advance through the pelvis, must be very carefully ascertained. If the vertex be the presenting part, and the parietal protuberances have cleared the brim of the pelvis, no serious impediment, generally speaking, need be apprehended; but if any other part than the vertex present, and if the bulky part of the head remain above the brim of the pelvis for a considerable time, disproportion may be dreaded.

Fourthly, The apparent effects of the labour throes require very particular attention. So long as they are perceived to act decidedly in pushing forward the presenting part, however slowly, the natural powers may be trusted, if other circumstances are favourable. But if they exert no influence upon the presenting part, for a time varying from half an hour to six or seven hours, according to the other symptoms of the case, it may be concluded that the infant is wedged in the passage, and that the contractions of the uterus are inadequate to expel it with safety. The means of ascertaining this important fact are to be stated in a subsequent section.

Fifthly, The condition of the passages furnishes a most important guide in deciding upon the nature of laborious labours.

When the author studied, he was taught to believe that the only obstacles to the progress of the infant from the state of the passages were, original malformation, or deformity, or exostoses of the bones of the pelvis, or diseases of the soft parts; but he was only a short time in practice before he discovered a cause of obstruction

which is much more frequent, under ordinary management than the other causes, viz. swelling of the parts lining the pelvis.

This swelling happens under two different combinations of circumstances, viz. where, after the rupture of the membranes, the head of the infant remains for a considerable time pressing strongly on the brim; and, *secondly*, where it becomes firmly wedged within the cavity of the pelvis.

In the former of those cases, the cervix uteri, as well as the linings of the pelvis, are swelled. In the latter cases the swelling is apparently confined to the parts within the pelvis, in contact with the infant's head. Both those cases may be recognised by the morbid heat and extreme tenderness of the parts alluded to.¹

Lastly, Most particular attention must be paid to the state of the general system of the patient. The appearance of the countenance, and the action of the heart and lungs, and the ordinary indications marking the strength of the individual, must be very minutely examined. No regard is to be paid to the alleged feelings of sinking of the woman, for these are often ideal, though they certainly excite the alarm of the attendants. While there is neither headache nor restlessness, and while the action of the heart and lungs continues regular, no expression of exhaustion on the part of the patient should impose on the practitioner.

On the whole, it may be concluded, that so long as there are no untoward symptoms in respect to the general health—so long as the pains continue to advance the infant—and so long as the passages remain in their healthy natural state, the contractions of the uterus may be expected to complete the delivery. But whenever symptoms of derangement of the general health, or evidences of the uterine contraction ceasing to advance the infant, or of there being an impediment to its advance in consequence of some state of the passages, become apparent—and more especially, whenever circumstances denoting injurious pressure or interrupted circulation in the important parts concerned in parturition occur, the natural efforts can no longer be trusted to.

The causes of all laborious labours are quite obvious, for all circumstances which can lessen the force of the uterine contractions, or which can increase the natural obstacles to the birth of the infant, must render the process more or less painful and difficult.

In the first and second orders of laborious labour, the infant and the apertures must necessarily be of such proportions that the one can be safely forced through the other; but in the third order, the infant is either too large to pass through the natural passages, or those passages are too narrow to admit of the birth of an infant of the usual bulk.

¹ When he mentioned this discovery to his father, the late Dr Alexander Hamilton, Professor of Midwifery in the University of Edinburgh, he found that his father had anticipated him in the discovery, but that he had been unwilling to divulge it, till he had had farther experience on the subject. It was communicated to the public in 1792, in his Father's Letters to Dr. Osborne, page 82, &c.

A review of the causes which, in the two first orders, lessen the force of the uterine contractions, or increase the ordinary resistances, must satisfy every unprejudiced person, that, with very few exceptions, they arise from inattention or mismanagement. Thus, the causes of diminished uterine contractions commonly enumerated are, general debility, debility of the uterus, passions of the mind, and irregular distribution of the blood.

Firstly, It is a curious fact, which merits very particular notice, that no natural cause debilitating the living powers, lessens the uterine contractions. In women in the last stage of phthisis pulmonalis, or of dropsy, as well as in those who are moribund from continued fever, or scarlatina, or pneumonia, or other acute diseases, there are usually strong uterine contractions when labour comes on. Perhaps the fact is so well known to the profession, that it is scarcely necessary to adduce any proofs from the experience of the author. It may, however, be useful to record one remarkable illustration.

Soon after marriage, a lady became dropsical, and, at the same time, had symptoms of pregnancy. The dropsical symptoms were allowed to proceed, on the avowed declaration of the medical attendants, that, in consequence of pregnancy, active measures could not be adopted.

This patient, when the author was consulted, was found to have the abdomen distended to such a degree, together with such œdema of the whole superficial cellular membrane, that she had been forced to be propped up in an easy chair during night and day for above three weeks, the slightest attempt at the reclining posture occasioning the feeling of threatening suffocation. It was supposed that she had not attained the completion of seven calendar months of pregnancy.

Under the very urgent circumstances of the case, the only resource was, the immediate induction of labour, which the author undertook entirely from a sense of duty, having the impression that she might probably expire in the act, for, as her posture could not be altered, there was the danger of fatal syncope supervening to delivery.

Nearly two wash-hand basins full of liquor amnii were discharged on puncturing the membranes of the ovum, notwithstanding which, the patient could not yet bear any degree of change of posture. Strong uterine contractions soon took place, and the delivery was completed within less than two hours. The placenta was separated without difficulty, and its expulsion was followed by that of several firm coagula of blood.¹

¹ This patient only survived three days, but it was the conviction of the author at the time, that if active measures had been pursued when the dropsical symptoms first occurred, or even if artificial delivery had been induced a month sooner, the patient's life might have been saved. Many years have elapsed since that case, and the author's additional experience has confirmed his original impression.

Without multiplying examples, the author feels warranted in believing, that when the force of the uterine contractions is impaired by general debility, it is always to be imputed to some mismanagement. In the lower ranks, undue excitement and impure air most frequently occasion this debility; and in the better ranks, the same effect is produced by the protraction of the first stage of labour, or by artificially increasing the action of the uterus by marching the patient through one or more apartments, or by using other endeavours to quicken the pains, as it is technically called.

Secondly, The most ordinary circumstances which debilitate the uterus itself are, the premature rupture of the membranes, and the protraction of the first stage.

It is a well known fact, that after the rupture of the membranes, the labour throes become much more powerful, but if the os uteri do not yield in a short time, this increased action necessarily tends to debilitate the uterine fibres, upon the same principle, that if a person unaccustomed to wield a blacksmith's hammer were to begin to beat upon the anvil with great force and great rapidity, his arm would soon become tired.

Occasionally, indeed, the premature rupture of the membranes is spontaneous, occurring before the practitioner is called. But in such a case, it is possible so to co-operate with the strong pains as to secure the dilatation of the uterus, before its muscular energy be impaired.

His observations on the injurious effects of the protraction of the first stage of labour, have been fully explained by the author in the first part of this work.

Thirdly, That inexperienced practitioners should be inclined to doubt that affections of the mind, such as fear, or overwhelming grief, may influence the labour throes, is not wonderful, because it is an established fact, that the muscular action of the uterus is not obedient to the will, but that individuals who have been actually engaged in practice should entertain such an opinion, seems to be very inexplicable.

Professor Davis says (page 972), "It has been asserted that labour has often been rendered tedious by certain passions of the mind. That protracted labours may have sometimes been accompanied by unhappy states of mind there can be no doubt, but the author is not sure that he has ever met with a genuine example of a case of parturition rendered tedious and protracted by this cause alone. He considers, therefore, the dogma as in a great measure unfounded, and its general prevalence as the result of repeated but inconsiderate assertion."

Presuming that Professor Davis reports the doctrines and practice generally adopted by the respectable practitioners of midwifery in London, the author holds it incumbent on him to notice very particularly these observations.

That fear is apt to diminish or suspend uterine contractions must be familiar to every man engaged in extensive practice. During the first stage of labour, it frequently happens that pains, which

had been recurring every four or five minutes, suddenly cease on the arrival of the practitioner; and the remark made by the patient and the nurse is, that the doctor has frightened away the pains. By prudent management the agitation of the patient subsides, and the pains recur. That this is a common occurrence every lady who has had a family can testify.

On the contrary, if the practitioner do not soothe the feelings of his patient, the action of the uterus may be suspended for hours. Of this the author could offer hundreds of illustrations, but one may suffice:—A lady in her fourth pregnancy repaired to a certain capital, for the benefit of the professional attendance of an eminent practitioner, now deceased. After labour pains had become quite regular and strong, this gentleman was sent for about one o'clock of the morning; and the first remark he made to his patient was, that he had gone to bed greatly fatigued, and that if he had been sent for unnecessarily he should be very much provoked. No labour throes followed this speech till seven of the morning.

But it is not in the first stage alone that fear and other affections of the mind have the influence of lessening or stopping uterine contractions. Many cases, almost every year of his professional life, have fallen under the notice of the author, where the pains had ceased from this cause, even when the infant was pressing on the perinæum.

Upon one occasion the author believes that the knowledge of this fact enabled him to save a patient under circumstances of great danger. It was the lady's first child, and the labour commenced with the two untoward circumstances of the premature rupture of the membranes and the presentation of the breech. When the infant was so far advanced as to begin to press on the perinæum, the author directed the nurse to put the patient in the proper posture, as he meant, after the next pain, to sit down to give assistance. Although he left the room for this purpose, he continued at the outside of the bed-room door; and on hearing a very violent bearing-down pain, he ran forward to take charge. He found the external parts enormously distended on the right side, and he at once discovered that an arterial branch within the right labium had burst, and that there was a great effusion of blood into the adjoining cellular membrane. It occurred to him, that if the uterine contractions continued, the pressure of the infant upon the swollen parts must occasion a laceration, and he feared that it might be impossible to command the bleeding vessel, for he knew that, in similar cases, the hemorrhage is arrested by the pressure consequent upon the coagulation and confinement of the effused fluid.

Thus reasoning, he told the patient that she had burst a blood vessel, and that if she attempted to bear down he could not answer for the consequences. The alarm thus excited had the desired effect, for the uterine contractions from that moment ceased.¹

¹ Twelve hours after the accident happened, the author directed a surgeon to make an incision, to the extent of two inches, upon the internal surface

If the author deemed it necessary to refer to published authorities in confirmation of the opinion that fear suspends uterine action, he could quote a case, detailed in the 31st volume, page 215, of the *Dictionnaire des Sciences Médicales*.¹

No man, therefore, can practise midwifery with safety to his patients or comfort to himself, according to the sincere belief of the author, who does not use his utmost endeavours to soothe the feelings and encourage the hopes of the suffering woman, whatever may be her rank in life; and he holds it to be a doctrine replete with great danger, that passions of the mind do not interrupt the progress of labour.

Fourthly, Irregular distribution of the blood must obviously tend both to diminish the muscular powers of the uterus, and to lay the foundation for serious injury in some of the important viscera. But when this circumstance takes place during labour, it is almost invariably the fault of the practitioner, for there are decided marks denoting the approach of this irregularity of the vascular action, which should lead to the adoption of the appropriate means of preventing it.

From the preceding observations, the fair inference is, that where the labour throes are ineffective from any of the above causes, (and combinations of those causes are occasionally met with), the circumstance should be attributed to mismanagement.

As to the causes which increase the ordinary resistances to the progress of the infant in the two first orders of laborious labours, it will appear, on investigation, that they too arise from some fault of the attending practitioner. They are—great relaxation of the parietes of the abdomen—rigidity of the membranes of the ovum—

of the right labium, and a quantity of coagulated blood, to the amount of upwards of two pounds, was extracted by the fingers, for external pressure had no influence. The infant was then drawn forward (alive) by means of the forceps, and the patient, after a tedious illness, so completely recovered that she afterwards had a large family.

¹ The patient was a poor woman, who, while in labour, was brought into a receptacle for the delivery of women, established in Paris for the benefit of his pupils, by a celebrated teacher of the last century, Mons. Solayers. The progress of the labour was so far advanced when she arrived at the hospital, and such were the regularity and force of the pains, that it was believed that her labour would be of short duration. But this poor woman was subjected to the examination of sixty students in succession, and in proportion as the examination proceeded, the pains diminished in frequency and force, and at last they entirely ceased. She continued without the slightest pain during the succeeding night, and during the two following days. On the third and fourth night, all the students, excepting nine or ten, having left her, the labour pains again began, but on the return of the students, who were then sent for, they again ceased. Mons. Solayers then desired the students to hide themselves, making arrangements to call them when necessary. As soon as she was rid of her visitors, brisk pains came on, and the head of the infant advanced rapidly. At this period the students were brought back, and their unexpected arrival again for some time suspended the pains, but at last the delivery was completed,—the poor woman declaring, that if she had known that the students were so near at hand, she should not have been delivered for eight days to come.

unfavourable position of the infant's head, and rigidity of the external parts.

Firstly, After frequent child-bearing, especially where the patient has not been properly treated, an extraordinary degree of relaxation of the parietes of the abdomen is apt to take place, in so much that when the woman is laid upon her side, the uterine action tends to press the infant's head against the lumbar vertebræ, instead of accommodating it to the apertures of the pelvis, and there can be no doubt that labour has from this cause been protracted for a considerable time. This, however, can always be prevented by the very simple expedient of supporting the abdomen by a suitable bandage, and making the patient remain upon her back, with her knees drawn up, till the head of the infant has entered the pelvis, when she can be allowed to resume the usual position.

Secondly, Many respectable practitioners have alleged, that unusual rigidity of the membranes does not retard the progress of labour,¹ but the experience of the author, at a very early period of his life, convinced him of this fact, and accordingly he has been accustomed to explain to his pupils, that, if after the os uteri is completely dilated, the membranes continue entire without passing into the vagina, or if advancing into the vagina, there be a quantity of liquor amnii interposed between them and the head of the infant, (so that the head does not enter the passage,) every labour throe till the membranes give way, is to be regarded as occasioning unnecessary and superfluous suffering. Above twenty years ago, a case occurred, which illustrates this subject very satisfactorily. The patient was a delicate person, who had not attained her seventeenth year. She had been in labour a great part of Thursday, and it was admitted, by an intelligent midwife who attended her, that the os uteri was fully dilated on Thursday night. Regular and strong pains continued from that date till the author was called on Saturday morning. On rupturing the membranes, three pains expelled the infant.²

Thirdly, Unfavourable position of the child's head is occasionally met with, without any previous mismanagement of the practitioner, although it was alleged, during the latter part of the last century, by Dr. Denman, Dr. Clark, and other eminent London teachers, that it was an ordinary consequence of the practice of prematurely rupturing the membranes, which many individuals were at that time in the habit of doing, for the purpose of hastening the delivery. But unless the infant be very large, the practitioner, by suitable

¹ Even Dr. Burns seems to have entertained this prejudice for some years. In his second edition, published in 1811, page 337, he says,—“Preternatural strength of the membranes has been considered as a cause of tedious labour, and we have accordingly been desired to tear them. This is, however, very seldom the case. When they remain long tense, it is oftener from spasm of the uterus, than from firmness of structure.” In his subsequent editions, he has, with his usual candour and judgment, altered this opinion.

² Dr. Davis recommends an instrument for rupturing the membranes, but a common writing pen is the best instrument.

counter pressure, can prevent the mal-positions alluded to from materially protracting the labour.

Fourthly, Rigidity of the external parts is not an uncommon occurrence in a first labour. If, however, the first stage be completed within twelve hours, and the directions for supporting the perinæum during the second stage, (detailed Part i. page 76), be attended to, the delivery should be accomplished within the usual time.

These observations ought to be indelibly impressed upon the mind of every member of the profession. The author's solemn conviction is, that where the woman is in good health, and where the passages are of the natural proportion, the only causes of the two first orders of laborious labours, which an attentive practitioner has to encounter, are, an unusual size of the infant, mal-position of its head, and rigidity of the orifice of the vagina.

Perhaps it may be supposed that some notice should be taken of two other causes of resistance which were formerly alleged by systematic writers, viz. shortness of the umbilical cord, and anchylosis of the coccyx.

Dr. Denman (vol. ii. page 17), has admitted the former of those causes. He says, "it may be naturally very short, or it may be rendered so accidentally by its circumvolution round the neck, body, or limbs of the child. Which soever of these is the case, the inconvenience produced at the time of labour is the same, that is, the labour may be retarded," &c.

"Shortness of the funis," he further says, "is always to be suspected when the head of the child is retracted upon the declension of every pain, and it may sometimes be discovered that it is more than once twisted round the neck of the child long before it is born."

Two cases have occurred to the author where the navel-string was naturally so short, that it became necessary to tie it, and to cut it within the vagina, consequently its length could not have exceeded six inches, and he has attended many cases where the cord was three and four times convoluted round the neck of the infant, but in none of those cases was there any impediment to delivery. And the reason for this is obvious. The uterus, in expelling the infant, is in close contact with it, and consequently the advance of the infant cannot be retarded by the shortness of the cord. The evidence which Dr. Denman gives in support of his opinion, viz., the retraction of the head of the infant, when the pain ceases, is most erroneous. Under such circumstances the retraction arises chiefly from the resistance to the coccygæi muscles. They yield in a certain degree during the pain; but when that ceases they react and draw back the infant.

As to tying and dividing the cord before the birth of the infant, a practice which Dr. Denman seems to sanction, the author has met with no case of laborious labour requiring such interference. But in a case of preternatural labour, to which he was called within these few years, he found the progress of the infant strongly arrested after the protrusion of the breech; and, on investigating the cause,

he observed that the cord entangled the infant, so that it passed up between the buttocks, strongly compressing the perinæum and genitals. With some difficulty he got two ligatures insinuated, and then he cut between them. The delivery was accomplished without further trouble. The portion of the cord remaining attached to the infant on birth was found to be between two and three feet in length.

Anchylosis of the coccyx, as a cause of protracted labour, is now, by the universal consent of the profession, an exploded doctrine.

Disproportion between the mother and infant, which constitutes the cause of the third order of laborious labours, is fortunately of rare occurrence, and is seldom the effect of mismanagement. Those causes are particularly enumerated in the third section, and the means by which they are to be recognised are minutely detailed.

SECTION I.—FIRST ORDER OF LABORIOUS LABOUR.

When labour is more than usually protracted, the first duty of the practitioner is to ascertain to which of the three orders the case should be referred. If the patient have been properly managed from the beginning this task is not difficult. It must be decided by a careful consideration of the state of the woman's general system,—of the position of the infant's head,—of the condition of the passages, and of the effect of the labour throes, as already explained.

After the practitioner has ascertained the safety and propriety of still trusting to the natural powers, he is to recommend such means as may counteract the cause of protraction. On the supposition that this is diminished or impaired action of the uterus, a practical question of great importance falls to be considered, viz. whether there be any drugs which have the specific power of exciting or increasing uterine contractions. Formerly many medicines were supposed to have such an effect, but experience proved their inefficacy so decidedly, that, till lately, all confidence in such remedies was abandoned; and in cases of ineffective pains the administration of stimulant clysters was the chief agent relied upon.

This practice has been recommended by Dr. Denman. He says (vol. ii. page 9)—“In some cases in which the action of the uterus is very feeble and slow in its returns, as if it were unwilling to come on, a clyster rendered stimulating by the addition of an ounce of culinary or cathartic salt, will often rouse the dormant powers into action, and the labour will be much sooner completed.”

Professor Burns (eighth edition, page 405) says,—“When again we come to view the means which we possess of counteracting these causes, and accelerating labour, in order that we may choose the one best adapted to the case, we find that they may be referred to the following:—*First*, diminishing resistance, or promoting relaxation, which increases contraction. Under this head may be included blood-letting, gently dilating the os uteri, rupturing the membranes, improving the position of the presentation. *Second*, Exciting the action of the uterus by stimulating its fibres, directly

or by sympathy. Under this head may be included the effect of cordials prudently given, heat, gentle exercise, clysters, spontaneous vomiting. Friction has also often a good effect in exciting the action of the uterus after its mouth is dilated, or nearly so." Again, he says, (page 407),—"But whilst in cases where labour is only a little protracted, and the cause not very well marked, we trust entirely to this treatment, with the addition of a saline clyster, which is of much service, and ought seldom to be omitted, yet, where it is longer delayed, some other means are allowable, and may be necessary." Dr. Little has highly lauded this practice in the number of the Dublin Medical Journal for March 1836.

There can be no doubt that, when the first stage of labour is allowed to continue for above twelve hours, the force of the uterine contractions is apt to be much lessened, or to be in a great measure suspended, and that if, after the patient has been in this state for some time, a stimulant clyster be exhibited, it not unfrequently has the effect of restoring the action of the uterus.

But the author has been called in to many cases where, notwithstanding the stimulant clyster having excited temporary uterine contraction, it became necessary to apply the forceps, although the patients had formerly had a family. His impression has uniformly been, that while the excitement of the uterine action, by means of irritating clysters, may in some cases expel the infant, it far more frequently exhausts the propelling powers, and renders artificial assistance necessary. He has never, where he had charge of the patient from the beginning, seen any case where he thought it useful to administer a stimulant enema.

Friction is stated in the quotation from Dr. Burns, (page 405), to be a means of exciting uterine contractions. This was strongly recommended some years ago by Dr. Power;¹ but the experience of the profession at large (as well as that of the author), has not confirmed the efficacy of this practice during the second stage of labour. In some cases, indeed, by its influence on the imagination, it may excite uterine contractions, but even in this view it is liable to the same objections as the administration of stimulant clysters.

Within these twenty years, a medicine formerly employed empirically in France, and other parts of the continent, viz.—the *secale cornutum*, or spurred rye, has been much vaunted as a *partus accelerator*, by the medical practitioners of America, and has lately been very extensively and indiscriminately had recourse to in Great Britain.

Against the use of this medicine the author has uniformly and strongly objected, upon the following grounds.

Firstly, If experience had established that the *secale cornutum* has the extraordinary power of exciting uterine contractions, it is little probable that its exhibition should have fallen into disuse

¹ Treatise on Midwifery, containing new principles which tend materially to lessen the sufferings of the patient, and shorten the duration of labour, by John Power, M. D.

for more than half a century at least. That some valuable medicines, such as groundsel, liverwort, &c., have been discarded from their practice by modern physicians, is admitted, but such remedies are still employed extensively by the common people in many districts, both in Scotland and in Ireland.

Secondly, A very fair trial was made of this medicine in the Hospice de la Maternité, at the suggestion of Mons. Chaussier, under the superintendence of Madame la Chapelle. She premises (page 314, vol. iii.) that, "In the employment of the medicine she had not been inert. She gave it sometimes in decoction and sometimes in infusion, making the patient swallow the infused powder, and the dose varied from twenty to sixty grains of the powder."

She declares the result to be, that, "In the first thirty-two cases only two patients had a return of the suspended uterine contractions after the medicine had been exhibited," and that "in fourteen or fifteen other cases in which the medicine was given in the form of attenuated powder previously infused in boiling water for ten minutes to the extent of even sixty grains, no increased uterine action was excited, and it generally became necessary to apply the forceps, though, in a few cases, the labour terminated naturally though tardily, and never under four hours after taking the medicine." Her verdict upon this trial (page 52, vol. i.) is most decided. She says that "the medicine has by no means realised the high expectations held out by its favourers, and that its chief virtue consists in its producing no bad effect."

Of the great difficulty of ascertaining the effects of medicines, the author has been always fully aware; but in the present instance, the result of Madame la Chapelle's experiments seems very conclusive. This may be perhaps illustrated to those who are sceptical upon this point, by a very obvious argument. Supposing that in forty-eight or forty-nine individuals an ordinary dose of ipecacuanha had been exhibited, could it have been expected that vomiting should be excited in no more than two of the number.

Thirdly, The experience of other practitioners has shown, that in many cases the ergot of rye has no effect. Dr. Little of Belfast, states,¹ that he had exhibited that medicine in fifty cases, and that it produced decided effects in thirty-four. But he has in the same essay made the following very singular admission. "For instance, the ergot of rye, which is now very generally esteemed a specific, is not by any means possessed of the same advantages, I care not how it is administered, as a solution of common salt, or hippo, either alone or combined together in the form of enema. I have succeeded in rousing the action of the womb in cases of tedious labour, with common salt, when used in the manner I stated in a foregoing part of this paper, in a far greater proportion of cases, than with ergot of rye, which has acquired such celebrity."

Fourthly, Such is the influence of imagination upon labour pains, that it must be extremely difficult in any case to determine

¹ Dublin Journal of Medical and Chemical Science, vol. ix. page 24.

whether uterine action which had been suspended, and which had returned after the exhibition of a medicine, be the effect of the confidence of the patient in its powers, or of the direct influence of the medicine upon the constitution. On this subject, the author refers with great pleasure, to an article inserted in the 29th volume of the Edinburgh Medical and Surgical Journal, page 322, by his friend Dr. Renton.

Fifthly, He can truly affirm, that since the indiscriminate use of the ergot of rye, he has been called in to cases requiring the use of the forceps, in consequence of suspended uterine action, of which he had never before seen any instances. For example, he had to employ the forceps in one case where it was the patient's tenth child, and in another case, where it was her twelfth, and in neither case was there the least degree of impaction.

Sixthly, It may appear extraordinary, that the author has only had two opportunities in practice of making a fair trial of this medicine. In both cases, it had not the slightest effect. The drug which he used had been kindly furnished to him by Dr. Davis, of Conduit Street, London.

Perhaps it may be necessary and useful to explain the reasons which have prevented the author from having had more opportunities of witnessing, in his own practice, the effects of this medicine.

Firstly, He has very seldom indeed met with any case of labour where he had the charge of the patient from the beginning, where uterine contractions became feeble during the progress of the infant through the pelvis, and in the very few cases of that description which have occurred, he ascertained that the suspension of the labour pains was occasioned by the patient dreading the agony of the last two or three bearing pains. In order to counteract this impression, he felt it his duty to prescribe a medicine, which he assured the patient would immediately bring back the pains, and hitherto he has invariably succeeded. Although he has used various medicines with this view, such as camphor, ammonia, ether, &c., the pains have generally come on within less than five minutes after the first dose, in many cases within two minutes.

Secondly, In every case of protracted labour, with the exception of the two cases already alluded to, under the charge of other practitioners, to which he has been called since the ergot of rye has become in general use, he has found it necessary to advise immediate delivery, in consequence of the urgency of the symptoms.

His conviction therefore is, that the ergot of rye, given in the doses hitherto recommended, can act in no other way than by influencing the imagination, and that it possesses no superiority in this respect over any other medicine. That it has injurious effects upon the infant, as has been so strongly stated by his friend, the late Dr. Hosack of New York,¹ he is disposed to doubt, believing that the instances recorded by Dr. Hosack were accidental coinci-

¹ *Vide* Dr. Hosack's Essays on various subjects of Medical Science, vol. ii., page 295.

dences; for the evidence of the harmlessness of this medicine, when given in moderate doses, is satisfactorily established.

After the preceding observations had been written, the author made an accidental discovery, which, in his humble opinion, unequivocally proves that the ergot of rye possesses no active medicinal powers.

On the 11th of May (1836,) in his progress to the south of France, on a little excursion for change of air, in consequence of a slight indisposition, he observed in a mountainous district between Auxerre and Chalons, some labourers (who were repairing the roads) at breakfast, and he was particularly struck with the appearance of the bread they were eating. It was literally as black as if the flour, of which it had been made, had been mixed with charcoal.

He took the first opportunity of enquiring into the cause of this remarkable appearance of the bread, and he learned from a most intelligent innkeeper at Chalons, the following particulars. "The bread eaten by the whole peasantry of a very extensive district is made of rye. As they do not think it necessary to separate the diseased portions of the grain, called ergot de siegle, but send the whole crop to the mill, the colour of the flour is necessarily black. The proportion of the ergot varies in different seasons, but it has never been supposed, in that country, that its admixture with the sound rye produces any influence whatever upon the health of the inhabitants."

This information recalled to the author's recollection, that the fact of the ergot being mixed with rye bread had been alluded to by more than one American practitioner, and that the still more important fact, that such admixture did not produce disease, had been also conceded.¹ But as rye forms no portion of the food of the inhabitants of Scotland, he was not aware of the inferences to be deducted from those admissions.

Is it then, it may be asked, reasonable to suppose that a vegetable substance eaten daily with perfect impunity by the inhabitants of an extensive district, could be possessed of active medicinal virtues? Yet Dr. Maunsell² says, that "extraordinary doses of this drug occasionally produce dangerous effects upon the nervous system, and probably other mischief, and at the same time are less likely to act

¹ Dr. William Tully of Middletown, Connecticut, in an essay inserted in the second volume of the American Journal of Science and Arts, No. 1, April 1820, pages 50 to 53, has the following remarks:—"With respect to the poisonous qualities of the clavus, and its power of producing malignant and epidemic diseases, there seems to be no foundation for such opinions. The quantity taken with bread must of necessity be so small, it must be diffused in such a quantity of flour, and so changed by the panary fermentation, as to become completely inert."

"Besides, it must have been eaten from time immemorial, as well since as before the occurrence of the diseases that have been attributed to it, whilst their appearance has been so rare as to cause them to be looked upon as phenomena."

² Dublin Journal of Medical and Chemical Science, vol. v. page 376.

upon the uterus than smaller quantities." In illustration, he states two cases which occurred to himself,—one case to Dr. Johnston, and two cases to Dr. Cusack, where symptoms of head affections supervened to the use of the ergot, without any increased action of the uterus. But there must have been some other cause for the symptoms.

Having had no opportunity of analysing the ergoted bread in question, perhaps it might be deemed incorrect to offer any calculation of the proportion which the ergot bears to the sound rye. But the author's impression certainly was, that it must have required at least one drachm of the ergot to every pound of the healthy seed to produce the black colour of the bread. Those who know the quantity of bread consumed by the natives of France will at once see that the adult peasantry of the district in question must be accustomed to eat daily, and with perfect impunity, from one to two drachms of the ergot of rye. As to the effect of the panary fermentation alluded to by Dr. Tully, it is unnecessary to offer any remarks. The biscuits furnished to the Danish sailors are made from rye, and are as black as the rye bread alluded to.

When, therefore, the progress of the labour is retarded by diminished uterine contraction, the means to be adopted must be accommodated to the cause of the diminished action. If there be general debility, or debility of the uterus, a few hours' rest must be secured, while the strength of the patient is to be supported. Due ventilation, perfect quiet, with change of posture; mild nourishment; cordials adapted to the habits and constitution of the individual, and opiates, are the means to be depended upon.

Opiates, however, must never be rashly advised. Dr. Denman long ago warned the profession against this practice (vol. ii. page 12.) The safety and the utility of opiates must be very carefully considered before being prescribed. If there be pain in the head, or any circumstance whatever which might render the further protraction of labour for ten or twelve hours injurious, opiates are most dangerous. The only utility of opiates in cases of protracted labour is, to suspend inefficient uterine contractions which wear out the strength of the patient without advancing the delivery, or to render those contractions more powerful, and there are no marks by which the one or the other result can be calculated upon.

Where opiates disagree from peculiarity of constitution, preparations of camphor or valerian may be substituted with advantage.

Diminished uterine contractions, arising from affections of the mind, require the appropriate means for inspiring hope and confidence. On this principle it sometimes does become necessary to prescribe medicines professedly to quicken the pains.

Irregular distribution of the blood, when it is ascertained to be the cause of protraction, is to be relieved by venesection. There is less risk of erring in the use of the lancet than in the exhibition of opiates, for there are few cases of protracted labour where bleeding can be injurious. While it relieves the general circulating system, it must tend both to prevent the injurious effects of pressure upon

the contents of the pelvis,⁷ and also to promote the dilatation of the passages. This practice has been inculcated by the author for at least forty-five years, and he has been not a little surprised to find in some late publications, the credit of it ascribed to Dr. Dewees of Philadelphia.

If, on the other hand, the protraction of labour arise from an increase of the ordinary resistances to the progress of the infant, the means to be adopted are very simple.

The treatment in cases of pendulous belly, and of rigidity of the membranes, having been already explained, (page 65,) requires no further notice.

As to the two other causes, unfavourable position of the infant's head is to be remedied by counter pressure, and this must be applied according to the circumstances of the individual case. Thus, where the face of the infant has a tendency to turn towards the pubes, the practice recommended, (Part i., page 75,) is to be followed. When the brow is the presenting part, the object should be, by counter pressure, to reduce it to a presentation of the anterior fontanelle, and where the face is forced foremost, the chin is, if possible, to be directed towards the nearer sacro iliac synchondrosis, till it be brought in contact with the coccygæi muscles, when it is to be gradually turned into the arch of the pubes.¹

Rigidity of the external parts may in some cases require blood-letting, but in general, if the directions for the management of this part of the labour, detailed (page 82 of Part i.,) be attended to, any ordinary rigidity will be naturally overcome.

SECTION II.—SECOND ORDER OF LABORIOUS LABOUR.

This order comprehends all cases where the labour pains become so inefficacious that the infant is no longer pressed forward, while, at the same time, there are unequivocal evidences that there is no actual disproportion between the mother and infant. In those cases it is necessary to have recourse to some mechanical means for completing the delivery, and the author has been led to prefer the forceps for this purpose. During many years he employed the common short forceps, with a double curvature, the form of which he described in the eighth volume of the Second Decade of Dr. Denman's Medical Commentaries, published in 1794, (page 405.)²

Latterly, however, he has preferred an instrument a little longer

¹ For about twenty years, the author has had no occasion to use any other means for the management of face cases.

² "The length of the instrument is 11 inches; that of each handle $4\frac{1}{2}$ inches. If a straight line be drawn through the centre of the plane surface of one handle, and be produced to the extremity of the instrument (which forms the axis of the handles when both are joined,) the convex edge of the blade, at the greatest distance from this line, is distant $1\frac{3}{4}$ inches, and the extreme distance of the point on the opposite edge is thirteen $\frac{16}{16}$ ths of an inch. When both blades are joined, their greatest width is $2\frac{3}{4}$ inches. The right hand blade has a hinge between the handle and blade, by which it is easily introduced while the patient lies on the left side."

than that recommended by the late Dr. Osborne, though precisely of the same form. The whole length of the instrument is $13\frac{3}{8}$ inches. That of each blade, from the upper end of the lock, is $7\frac{5}{8}$ inches, leaving $5\frac{1}{2}$ inches for the length of the handles. When both branches of the instrument are joined, the greatest distance between the blades is $2\frac{5}{8}$ inches. With this instrument an infant of the ordinary size can be safely drawn through an oval aperture, the long diameter of which is four inches, and the short three and a quarter, or even a fraction less, according to the compressibility of the head.¹

This instrument is very different from that apparently employed in the Dublin Lying-in Hospital. Dr. Collins says (page 12), "When we consider that the blades of the smallest sized forceps used in Britain, even when completely closed, measure from $3\frac{1}{8}$ inches to $3\frac{1}{2}$ it is clear that were the bones of the pelvis denuded of their soft parts, there would not be space to admit of their application." These observations account for certain opinions in respect to the utility of that instrument, which Dr. Collins seems to entertain.

Cases requiring the use of the forceps occur so seldom where the first stage of labour is properly conducted, that, in the course of forty-eight years' practice, the author has only had occasion to employ that instrument thirty-three times where he had had the charge of the patient from the beginning, and these were cases where, after the labour had continued for a certain time, the contractions of the uterus had ceased to have any influence in advancing the infant, either from unusual size, or malposition of the head, while there could be no doubt respecting the safety of the operation.

There is too much reason to believe, that British practitioners, from their unwillingness to give pain, or to hurt the feelings of their patients, are apt to procrastinate, and to lose the favourable time for safe and effectual interference. No intelligent practitioner would wait in cases where the labour throes cease to have any influence in advancing the delivery, if the head of the infant be within reach of the forceps, till there be "heat or tenderness of the passages," and still less till "the patient's strength be much exhausted."

It is impossible to imagine a more erroneous description of the condition into which a woman in labour should be allowed to fall before having recourse to the use of the forceps, than that given by Dr. Osborne, (page 69.) Indeed the great utility of this mechanical contrivance is, that it enables the practitioner to prevent the occurrence of those untoward symptoms which the doctor has described as alone warranting the use of the instrument. Waiting "till the powers of nature are absolutely and altogether exhausted," is a most dangerous doctrine. In page 57, Dr. Osborne even hints at waiting for the third or fourth day before interfering.

The obvious duty of the practitioner in every case, must be to ascertain what the natural efforts can accomplish, and when he is

¹ Upon one occasion, the author gave a public demonstration in his classroom, of the superiority of this instrument to that invented by Dr. Davis, by the application of the two instruments upon the head of a living infant.

satisfied that the delivery cannot be permitted to go on without some injury to the mother or to the infant, he is no longer to delay assistance. Keeping this principle in view, the time allowed for the efforts of nature must be regulated by the symptoms of the individual case.

For the illustration of this practical doctrine, the author may briefly state the particulars of two cases which he attended within these few years. In the one case the patient, who had exceeded the fortieth year of her life, became in labour of her first child at about eight of the evening. Ten hours elapsed without much progress, notwithstanding regular pains. Venesection was then had recourse to, and by eight in the morning the os uteri was fully dilated, the membranes had burst, and the head of the infant in the natural position, had advanced so far into the cavity of the pelvis as to be in contact with the coccygæi muscles. Two hours now elapsed under strong pains, recurring every three minutes without any further progress. A finger applied to the presenting part during a pain, was not in the slightest degree pressed upon. The infant was then drawn forward by the forceps, with perfect safety both to it and to the mother.

In the other case the patient had not attained her thirtieth year, and it was her first labour. She began to be ill at eleven o'clock at night, and by seven of the morning the infant's head filled the cavity of the pelvis. There it remained immovably fixed, notwithstanding regular and strong pains, till two in the afternoon, when the forceps was applied, and the delivery was accomplished easily and successfully.

This difference of practice can be readily explained. In the former of those cases, the first stage of labour had lasted nearly twelve hours, and the patient was well advanced in life; it was therefore judged prudent to give assistance on finding that the infant had been wedged for two hours within the passage. In the second case, on the other hand, the first stage of labour had lasted only eight hours, and the patient was a young and healthy individual, and consequently it was a duty to delay interference, till there should be a moral certainty that the labour throes could not safely accommodate the infant to the passage.

These two cases are selected, for the purpose of marking the two extremes of time, during which it is proper to wait for the effects of the uterine contractions, where there are no untoward symptoms, and the author must express his surprise at the delay recorded in many of the cases which occurred in the Dublin Lying-in Hospital, under the very able superintendence of Dr. Collins and Dr. Kennedy. It appears that from twelve to twenty-four hours were not unfrequently allowed to elapse in cases where (there being no disproportion) the labour throes ceased to advance the infant, before recourse was had to instrumental delivery.¹ He can scarcely

¹ *Vide* Dr. Collin's work, page 300, No. 32; page 462, No. 49; page 464, No. 150; ditto, No. 173; page 465, No. 209; page 469, No. 425; page 470,

permit himself to believe that the the patients, instead of having been watched unremittingly from the moment that the infant's head had passed through the os uteri, had only been visited from time to time according to the practice adopted above half a century ago.

He has invariably inculcated upon the minds of his pupils the necessity for remaining steadily and uninterruptedly by the bedside of the patient, anxiously marking the effect of the pains, from the time that the second stage commences till its completion, and he has scrupulously adhered to that precept in his own private practice, whatever the rank of the patient might have been. It was to enforce this rule, and to suggest means for preventing the laceration of the fourchette that he has dwelt so minutely on the management of the second stage of labour in the first part of this work. The number of cases of partial laceration of the perinæum, in which he has been consulted, is incredible. It is the most ordinary cause of prolapsus uteri in the better ranks.

If the progress of the labour be watched, as it ought to be, from the time that the os uteri is fully dilated, it seems impossible that the state of the patient in any case could be allowed to be such as that described by Dr. Collins in the following quotation, page 464.

No. 150. "Was forty-eight hours in labour in the hospital, the waters having been discharged a considerable time before admission. For several hours after she came in, the labour pains were neither severe nor frequent; however, the uterus afterwards acted well, and the head was forced so low as to cause the scalp nearly to protrude, when it remained stationary for twelve hours. The ear could be distinctly felt next the pubes, and there was sufficient room towards the sacrum to admit the introduction of the forceps with ease, yet in the transverse direction of the outlet there was evidently a diminution in size. It was thought, however, as the head was so low, by gentle assistance it might be got down; no force, notwithstanding, consistent with safety, was found sufficient. As the patient's strength was rapidly sinking, and the abdomen had become tender on pressure, delivery was accomplished by lessening the head."

By attentively watching the effect of the pains from the commencement of the second stage of labour, the author, from experience, feels warranted to assert that it is always in the practitioner's power, in cases where there is little or no disproportion, to ascertain the propriety of interference, so opportunely as to prevent the occurrence of injury, either to the mother or to the infant. It must be obvious to every practical man, that if, in the case of the Princess Charlotte, the forceps had been applied at six o'clock of Wednesday afternoon, (November 5th, 1817), when the meconium

No. 509; ditto, No. 526; page 471, No. 555; page 472, No. 626; ditto, 639; page 473, No. 665; page 474, No. 667; page 475, No. 674; page 476, No. 740; page 477, No. 808; ditto, No. 817; page 478, No. 820; page 480, No. 976; ditto, No. 1005; ditto, 1032; page 482, No. 1041; ditto, No. 1053.

was discharged, the infant's life might have been preserved, and the mother might have had an infinitely better chance of recovery.

That melancholy case, by the by, strongly shows the fallacy of a rule which appears extremely plausible, and which has been scrupulously adopted, according to the author's interpretation of the recorded cases, in the Dublin Lying-in Hospital. The rule to which he alludes is delaying interference "as long as the head of the infant advances ever so slowly." (Dr. Collins, p. 17).

But while the author declares, as his opinion, that no woman should be allowed to continue in labour, with strong and regular uterine contractions, without any advance of the head, for twelve, and far less for twenty-four hours after the complete dilatation of the os uteri, he admits that in the present state of practice, cases, with the symptoms described by Dr. Collins, must occasionally occur.

His practice in such cases, however, would be entirely directed by the state of the woman, and not by that of the infant. If its "head had been, for twelve hours or more, firmly compressed in the pelvis, not leaving space for the passage of a catheter,—if the urine be retained from severe pressure on the urethra,—the patient complaining of acute pain on pressure of any part of the abdomen, the pulse being at the same time hurried, and the strength failing," he should consider it his duty instantly to relieve the poor woman, without paying the least regard to the condition of the infant. Delay under such circumstances, according to Dr. Collins's own showing, would be productive of sloughing of the contents of the pelvis, with all its fatal consequences, as he has so well described, (page 13.)

Some most respectable practitioners, as well as Dr. Collins, have supposed that the use of the stethoscope furnishes a safe guide for the management of cases of protracted labours, and the author is well aware, that in controverting this doctrine he may be accused of prejudice, and yet there is no subject on which he has deliberated more anxiously, and on which he has come to a more positive decision. Considering, however, the prepossessions in favour of the stethoscope, he holds it incumbent upon him to explain at full length his reasons for this opinion.

He assumes, in the *first* place, that where the patient is under proper management from the beginning, it is in the power of the practitioner to judge whether the labour pains tend to advance the infant. Young practitioners, indeed, may deceive themselves by the swelling of the scalp, which in some cases lengthens the head to the extent of between one and two inches.

Secondly, He considers, that after the second stage has commenced, if regular pains continue, and the infant become wedged in the passage, the practitioner is imperiously called upon, supposing the infant within reach of the forceps, to interfere before there is a probability that the pressure may destroy the infant's life, and certainly before any untoward symptoms threaten the mother.

Thirdly, The forceps, if properly applied, can do no harm whatever to the mother, while, by diminishing the bulk of the

infant it enables the practitioner to lessen as well as to shorten her sufferings.

Fourthly, The principle by which he has always been directed in cases of protracted labours, to which he has been called by other practitioners, has uniformly been to consider the state of the mother principally, but not exclusively. Thus, if immediate delivery be required, he always ascertains whether the use of the forceps be safe, for if there be any evidence that there has been injurious pressure upon the passages, he considers it to be unwarrantable to employ that instrument. Although, therefore, the stethoscope were to show that the infant were still alive, he should have no hesitation, under the urgent circumstances represented, to sacrifice the life of the infant to preserve the more valuable one of the parent.

Fifthly, He cannot imagine a case of laborious labour, which had been much protracted, where the knowledge of the state of the infant can be necessary to regulate the practice. If the circumstances permit the safe use of the forceps, that instrument should be employed, admitting the necessity of interference, whether the infant be dead or alive. And, on the other hand, if, from the previous mismanagement, or other circumstances, it would be unsafe to use that instrument, it ought not to be ventured upon, even though the infant be alive.

Cases now and then occur, where, from the urgency of symptoms, speedy delivery becomes necessary, although the head be only partly within the brim of the pelvis, while the apertures seem to be of the ordinary proportions. It is justifiable, as the author has remarked in his *Select Cases of Midwifery*, page 76, to make a cautious trial of the forceps before having recourse to the perforator. In the early part of his practice, when he found that he could not succeed with the forceps in such cases, he accomplished the delivery by opening the head without withdrawing the forceps, a practice which, since that time, has been frequently had recourse to in the *Hospice de la Maternité* of Paris, under the direction of the late *Madame la Chapelle*.

Having very carefully considered all the cases of laborious labours recorded by Dr. Collins, the author cannot divest himself of the impression that the doctor does not sufficiently appreciate the value of the forceps. His general rule for the use of that instrument is contained in the following paragraph.

"The delivery of a female with the forceps, when the os uteri is fully dilated, the soft parts relaxed, the head resting on the perinæum, or nearly so, and the pelvis of sufficient size to permit the attendant to reach the ear with the finger, is so simple, that any individual with moderate experience may readily effect it. I have no hesitation in asserting, that to use it under other circumstances, is not only an abuse of the instrument, but most hazardous to the patient. It is from being thoroughly convinced of these facts, by long and extensive observation, that I consider the forceps quite inapplicable when the head becomes fixed in the pelvis, and that the ear cannot be reached by the finger, except by violence, in

consequence of disproportion existing between the head and pelvis, either owing to the former being unusually large, or the latter under size."

Again he says, (p. 15,) "The only means of effecting delivery, where the disproportion between the head of the child and the pelvis is so great as to prevent us reaching the ear with the finger, is by reducing the size of the head, and using the crotchet."

These observations warrant the inference, that Dr. Collins is not fully aware of the power of the forceps. For, in the *first* place, when, from the protraction of the labour, the necessity for interference occurs, although the ear of the infant be within reach of the finger, that is, so near the external orifice, that an ordinary sized finger could touch it, it very seldom happens that this can be accomplished, without giving pain. If Dr. Collins's rule, therefore, were adopted, the forceps could not be employed once in twenty cases, where the author from experience knows it to be both safe and useful.

Secondly, By means of well adapted forceps, the infant's head, as already stated, may be made to occupy less room, in consequence of the approximation of the parietal bones, and therefore, that instrument is particularly serviceable where the infant is wedged in the passage from the unusual size of its head.

Thirdly, That the blades of the forceps are to be applied over the parietal bones of the infant with the convex edge in such a direction that it shall, in the course of the operation, be brought along the hollow of the sacrum, is an axiom that is indisputable, but it is not necessary, for this purpose, that the ears be felt. Although, when the head has been for any time compressed, the swelling of the scalp renders it difficult to trace the sutures, the shape of the several bones of the cranium can always be recognised, and therefore the practitioner should be able readily to ascertain the exact position of the infant, and to slide up the instrument in the proper direction. During the last thirty years, where the author has had occasion to use the forceps, he has never even endeavoured to feel the ear of the infant.

Dr. Collins has recorded¹ cases where the application of the forceps proved unsuccessful, and the author ventures respectfully to offer the following explanation of those disappointments. *Firstly*, The instrument employed had certainly not been calculated to lessen the head of the infant, to the degree which it can bear with impunity; viz. to three inches between the parietal protuberances. And,

Secondly, Dr. Collins seems not to have been aware, that in operating with the forceps, traction so directed as to accommodate the infant to the passage, renders it unnecessary to make almost any degree of lateral pressure, upon the parts of the mother in contact with the infant, which is the principal cause of danger.

¹ Page 278, No. 34; page 301, No. 7; page 303, No. 10; page 464, No. 150; page 460, No. 425, &c.

Although the author has for several years used an instrument of greater length than he did for the first twenty years of his professional life, he has followed rigidly the rule which he had prescribed to himself at the commencement, of his practice, viz. never to apply the instrument till the head of the infant has cleared the uterus, and of course till it fill the pelvis, or nearly so, except under the circumstances specified in *Select Cases of Midwifery*, page 22.¹

No danger can arise from the employment of the forceps, if the instrument be applied in proper time, and if it be used with suitable dexterity. But the author must admit, that he has been called in to several cases where inflammation of the parts lining the pelvis had followed that operation, and he cannot decide whether, in those cases, the inflammation had been the effect of mechanical injury from the instrument, or of the operation having been too long delayed.

Madame la Chapelle has given an interesting account of the result of the cases where the forceps was had recourse to in the Hospice de la Maternité of Paris, under her superintendence, and it presents a most unfavourable view of the practice. "*Marche rapide de la Peritonite*" seems to have been a very ordinary occurrence in that hospital, and the proportion of deaths must appear extraordinary to British practitioners. In the author's opinion, there are three circumstances which explain the frequent fatality of this operation in France, viz. the unwieldy form of the instrument; *secondly*, it being applied while the head of the infant is still within the uterus; and, *thirdly*, its indiscriminate use in cases of actual disproportion; by which the author means a deficiency of space in the apertures of the pelvis; for any unusual size of the infant, independent of monstrosity or disease, can be overcome by the compression of well adapted forceps.

As the author, in the year 1794, published an Essay in the eighth volume of the second decade of Dr. Duncan's Medical Commentaries, (page 400,) on the utility of Dr. Lowther's lever, it may perhaps be expected, that he should explain the reasons which for many years have induced him to discountenance the use of that instrument, excepting in face cases, where the practitioner is called too late to accommodate the infant by the manual assistance already described.

¹ "Two circumstances alone render the employment of the long forceps eligible or even warrantable; *first*, the necessity of speedy delivery, while there are no pains, and the head is beyond the reach of the short forceps, and the apertures of the pelvis are under the usual dimensions. And, *secondly*, the necessity of immediate delivery where the head is in the same situation, but where the apertures of the pelvis are natural, and the soft parts are relaxed.

"By this practice, under the former of those circumstances, it is sometimes in the power of the practitioner to accomplish the delivery, by means perfectly consistent with the safety of the child, and consequently the long forceps should be generally tried before recourse be had to the operation of *embryuleia*, unless the deficiency of space in the pelvis be very considerable."

When he began practice, he was taught to expect the frequent occurrence of protracted labours, and the precepts and example of Dr. Lowther, who was one of the most judicious teachers whom he ever knew, led him to believe, that the instrument which the doctor always carried in his pocket, might at all times enable him to save the patients much suffering. But he soon found, that by limiting the first stage of labour to twelve hours duration, as already explained, laborious labours very seldom occur, and that when they do, the mechanical expedient which they require should enable the practitioner both to supply the *vis a tergo*, and to accommodate the infant to the passage. While the forceps combines both powers, with the additional advantage of lessening, to a certain degree, the size of the infant's head, Lowther's lever possesses only the former, and that too in an imperfect degree; for Dr. Lowther always said, that without labour pains it had little effect. His calculation was, that, by its use, the efficacy of the labour throes could be doubled.

SECTION III.—THE THIRD ORDER OF LABORIOUS LABOURS.

This order comprehends all those distressing cases where there is a disproportion between the infant and the apertures through which it must pass. Such cases are to be distinguished from those constituting the first and second order, chiefly by attention to the effect of the labour pains, the relative situation of the infant's head, and the condition of the passages.

For the purpose of understanding the means of distinguishing those cases, it is necessary to notice the several causes of this order of laborious labours, and the author considers that the most satisfactory manner of doing so is, to state briefly those causes which he has met with in practice, and to add his opinion on the probability of some obstacles to the progress of the infant which have been described by authors.

It may seem superfluous to remark, that the resistance may arise from the state of the infant, or from that of the uterus or vagina, or from that of the bones of the pelvis singly or collectively.

Firstly. The infant may have attained an unusual growth, with or without ossification of the sutures, particularly of the sagittal suture. Of both deviations the author has met with a few instances. He had once in his possession a portion of the fetal cranium, where the parietal protuberances had been four inches and a half asunder, and where there was a prominent bony ridge on the surface of the sagittal suture.

Enlargement of the head from hydrocephalus is occasionally met with. The following are the lineal dimensions of the skeleton frontal, parietal, and occipital bones of an infant, whose head the author was obliged to open some time ago. The frontal bone, from the root of the nose to the point forming the frontal corner of the anterior fontanelle, measured four and a half inches; the breadth of the same across the brows at the widest part also four and a half inches. The parietal bone from its corner next the anterior part

of the temporal bone to that next the lambdoidal suture measured five and five eighths inches. And from its corner next the anterior fontanelle to its corner next the base of the occipital bone six inches. The occipital bone, from its point next the vertex to its union with the foramen magnum, measured three and one fourth inches. And in its broadest part laterally three and three fourths inches.

Some notion may be formed of the extraordinary size of this head by comparing these dimensions with those of an infant weighing seven pounds, as specified in the subjoined note.¹

Soemmering has described a series of monstrous fœtuses in whom two heads were joined in various proportions, and the author has one specimen of that kind in his possession, where there are two heads with a single face, but he did not witness the labour of the individual who produced that monster.

He has been called to several cases where the hands and arms had been allowed to come down along with the head. In one case it was too late to save the patient.

Malposition of the head, from its long diameter being firmly wedged within the short diameter of the brim, is not an unfrequent occurrence, especially among the lower ranks; and, in the early part of the author's life, he was called to a number of such cases.

Secondly. Polypous tumours attached to the internal surface of the uterus, scirrhus of the cervix uteri, enlargement of the ovary, swelling of the linings of the pelvis, tumours attached to the internal surface of the pelvis, accumulations of the fœces within the rectum, cicatrix of the vagina, and malformation of the external parts, are the several obstacles arising from the condition of the passages, which the author has actually witnessed.

Of the above causes, he has met with four instances where individuals had become pregnant, in whom the external orifice was so small that it could barely admit the introduction of an ordinary quill, and one where there was a cicatrix in the vagina. Two remarkable cases of the latter obstacle are recorded in the Appendix. Dr. Collins has mentioned two cases of the same kind, in one of which the patient was saved.

Certain alleged obstacles to the safe progress of the infant through the natural passages have not fallen under the author's observation, and therefore, perhaps, he ought not, consistently with his views in this work, to advert to them, and yet the importance of the subject induces him briefly to notice them.

An accumulation of urine in the bladder is the first of these. That this sometimes happens during protracted labour, consists with the author's knowledge, but he has never met with any instance where it prevented the infant being drawn alive through the natural passages.

¹ In an infant weighing at birth seven pounds avoirdupois, the dimensions in the same lines are as follows:—

Frontal bone, two and a half inches by two.

Parietal bone, four and one eighth inches by three and three fourths.

Occipital bone, two and a half inches by two and a half.

Stone in the bladder, is one case upon record, opposed a fatal obstacle to the birth of the infant.¹ Had the author been called to such a case he should certainly have proceeded to extract the infant piece-meal, before symptoms endangering the life of the parent had taken place.

Dr. Drew published, several years ago, a very interesting account of an obstacle to the progress of the infant, which the author was at first inclined to discredit. It is inserted in the first volume of the *Edinburgh Medical and Surgical Journal*, page 20. In a patient not pregnant, who died in consequence of a tumour, which completely filled the pelvis, and obstructed the passage both from the bladder and the rectum, he ascertained, by dissection, that the tumour was attached by a strong root, of a hard gristly nature, to the right sacro-sciatic ligament. This tumour was perfectly round, about sixteen inches in circumference, of a fat gristly substance, without any appearance of circulation in it, and was easily separated from the parts in which it was imbedded by means of the fingers, without the laceration of either vascular or muscular substance.

Within less than a year, Dr. Drew was called to a case of labour, where the delivery seemed to be obstructed by a similar tumour. The doctor proposed an operation, and it was performed with such success, that a living child was born, and the patient had a complete recovery. The authenticity of this case is attested by Dr. Power, Dr. Hannan and Mr. Pack.

Respecting the necessity for the operation in this case, the author for a long time had some doubts, founded partly upon his experience of cases of œdema of the external parts, where immense swellings gradually subside during the progress of labour, and partly upon the event of a case which he had attended, where there was a large incompressible tumour imbedded in the right labium, which nevertheless permitted the safe birth of the infant. It was his belief, that any tumour attached to the sacro-sciatic ligament, might, in the progress of labour, be so pushed into the muscles on the back of the pelvis, as to allow of the passage of an infant through the vagina.

But, on attentively considering Dr. Drew's case, he is now convinced that he had formed an erroneous judgment. As the tumour weighed two pounds and a half, and measured fourteen inches in circumference, and was situated between the sacro-sciatic notch and tuberosity of the ischium, it is evident that it could not have been pushed out of the pelvis.

Thirdly. With respect to the state of the pelvis, he has sometimes found it defective in the ordinary apertures from natural formation, but much more frequently from altered texture of the bones.

In some of those cases the innominata and sacrum were naturally smaller than usual. In others, the base of the sacrum was narrow, while the innominata were of the usual size. For several years he showed to his pupils a pelvis, where the base of the sacrum had

¹ *Edinburgh Medical and Surgical Journal*, vol. xxxi. page 56.

receded, and had enlarged the anterior posterior diameter at the brim, while its apex having advanced, greatly diminished the space between the coccyx and pubes.

Softness of the bones of the pelvis is certainly the most frequent cause of diminution of its apertures, and it is well known that this disease may take place in early childhood as well as after adult age. Generally speaking, if rickety female children live till puberty, the apertures of their pelvis are not very defective, even although the person be a good deal deformed. But two remarkable exceptions to this rule are exhibited in skeletons in the author's possession, as particularly described in the Appendix.

When the softness of the bones occurs after puberty, it has been found to occasion much greater deficiency of space than in cases of rickets. In that latter disease, the brim is most commonly affected, and while the cavity is perhaps scarcely half the ordinary depth, the outlet is often wider than usual. In cases of malacostion, on the other hand, the several apertures, of the brim, cavity and outlet, are apt to be greatly lessened, and the depth of the cavity to be augmented by the jutting in of the lumbar vertebræ and promontory of the sacrum, and by the approximation of the ilia, so that the rami of the pubes and ischia are brought almost in contact, while the acetabula are forced inwards. These several deviations are particularly specified in the Appendix.

Exostosis of the bones of the pelvis is so rare an occurrence in child-bearing women, that the author has only met with one instance in the course of his practice. The poor woman, after having been five days and nights in labour, (having four years before had a living child,) had been delivered of a still born infant. As the placenta did not come off in the ordinary time, the author was sent for. The extraction of the placenta proved unavailing, for the woman sunk in a quarter of an hour. It was found that an exostosis, the thickness of an ordinary sized finger, extended along the whole internal surface of the symphysis pubis, and had narrowed both the brim and cavity of the pelvis.

Where the uterine contractions cease for a certain time to advance the infant, supposing that the patient has been properly treated from the beginning of labour, if the bulky part of the head remain above the brim of the pelvis there is reason to fear that there is a disproportion, unless some other part of the head than the vertex is forced foremost. The same conclusion may be formed, if, after the head have been advanced as far as the sacro-sciatic ligaments, it remain wedged in the passage.

Under either combination of circumstances, it becomes necessary to examine, with great care, the dimensions of the pelvis. This is best done by means of the fingers, as every pelvimeter hitherto invented, whether for external or internal application, is liable to mislead,¹ even where the resistance arises from deformity of the pelvis.

¹ Every practitioner should carry in his pocket a portable foot-rule.

If there be not an aperture measuring four inches by three, the uterine contractions cannot propel any other than an infant under the usual size, and consequently, if, after a fair trial of the effects of those contractions, the infant remain wedged, the case must generally be referred to the third order of laborious labours.

Young practitioners, however, must be particularly cautioned against two errors; *first*, mistaking the lengthening of the infant's head, which is the effect of compression, for its actual advance; and, *secondly*, the not giving a fair trial to the uterine contractions.

The former of those errors is to be avoided by a careful examination of the posterior part of the pelvis. So long as no part of the head is in contact with the anterior surface of the sacrum, there can be no real advance of the infant.

As to the latter error, it is to be recollected, that if the cavity of the pelvis be very shallow, and the outlet wide, the uterine contractions sometimes squeeze the head through the brim, even although it be obviously defective. The subjects of those cases are little deformed women, who have been rickety from their childhood. The author has attended several women of this description, who have borne healthy infants of the ordinary size, although the free space between the pubes and sacrum certainly did not exceed three inches.

While, therefore, in such patients, the labour pains continue regular, and no untoward symptom occurs, it is the duty of the practitioner to support the strength and spirits of the woman, and to give time, always keeping in view that (to use a metaphorical expression) he is to ascertain what nature can do, not what she can suffer. If this obvious rule be attended to, no patient can be reduced to the situation described by Dr. Collins in the following words, (page 16.)

"When uterine action continues regular and strong for twelve or twenty-four hours after the os uteri is dilated, or nearly so, without the child's head making progress, it being firmly compressed in the pelvis, not leaving space for the introduction of the finger to feel the ear, or in some, the passage of a catheter into the bladder; the urine perhaps retained from severe pressure on the urethra, or when removed, bloody or very scanty, and of a deep colour; the patient complaining of acute pain on pressure, in any part of the abdomen, the pulse being at the same time hurried, and the strength failing; these are symptoms indicating the use of the perforator, and their being urgent or otherwise, should make us deliver sooner or later."

According to the author's conviction, an intelligent and attentive practitioner can always decide whether there be any considerable disproportion, long before the symptoms thus described take place. He has certainly seen many cases of that description, but he has always considered that they were the effects of mismanagement, and that the great advantage which the better ranks of society enjoy in being able to command the attendance of scientific practitioners is, the exemption from those untoward symptoms which arise from

indecision and procrastination. It is a well known fact in this city, that, for above thirty years past, no patient under the author's care has been in real labour for a longer time than twenty-four hours, whatever may have been the nature of the case.

On the supposition, however, that the practitioner is not called to the patient till she had been a very considerable time in labour, the marks by which he is to distinguish the precise order to which the case is to be referred, have been already explained.

Where cases belonging to this order of laborious labours have, from ignorance, been left to the natural resources of the constitution, and the patients have survived, the ordinary effort has been the following. The continued pressure upon the navel-string first destroys the life of the infant—putrefaction then follows—the teguments of the head burst—the brain is discharged—and the putrid mass is eventually thrown off.

Of this natural process, the author has had an opportunity of seeing a few cases, but in all of them the life of the patient was preserved at the expense of much local injury.

There is a well authenticated instance of another effort of nature, by which the poor sufferer was relieved, and eventually saved, viz. the bursting of the uterus, and of the parietes of the abdomen, and the expulsion of the ovum through the laceration.¹

British practitioners have most properly founded the practice, in cases of this order of laborious labours, upon an imitation of those natural processes. If there be such a disproportion between the infant and the apertures that it cannot be forced through them alive, either by the natural contractions of the uterus, or by the use of the forceps, it must be quite evident that the only chance of saving the patient, is lessening the infant's head and drawing it forward by mechanical means, provided there be sufficient room for accomplishing that object with safety to the parent. There are, therefore, two questions to be determined in those cases; *first*, if there be an actual impossibility of the infant being drawn alive through the natural passages; and, *secondly*, if there be sufficient space for the safe extraction of the infant, when mangled by means of the perforator.

As to the former of those questions, the marks by which it can be determined have been already detailed; but with respect to the latter, there has been much variety of opinion amongst the profession, and it must be admitted that it is sometimes one of the most difficult which can be solved.

This difficulty arises from two circumstances; viz. the difference of size of the infant even at the full period, in different cases, and the impossibility on many occasions of ascertaining the precise dimensions of the apertures of the pelvis in the living subject.

That the head of an infant weighing seven pounds, can be so diminished, as to be safely brought through an aperture which could not permit the passage of a fœtus of eleven or twelve pounds

¹ Edinburgh Medical Essays and Observations, vol. v. page 439.

weight, is a self-evident proposition ; but while the infant remains above the brim of the pelvis, its size cannot be estimated.

Excepting in cases of great deficiency of space, it is impossible to ascertain with geometrical precision the exact dimensions of the aperture, and therefore, in the ordinary cases which occur, the precept which was so strenuously and plausibly urged by the late Dr. Osborne, that unless there be a free space to the extent of three inches between the pubes and sacrum, an infant at the ordinary period of utero-gestation cannot be passed alive, might lead to the most serious errors.

For, in the *first* place, as already stated, it is impossible, in many cases, to ascertain the precise dimensions at the brim of the pelvis, and a miscalculation of the sixteenth part of an inch might be fatal to the life of the infant.¹

Secondly. There must be always some difficulty in ascertaining whether the woman be at the full period of pregnancy, and therefore, there is always a chance that the infant may be under the ordinary size.

Thirdly. It is a well known fact, that a female infant of the ordinary weight, can safely pass through an aperture which cannot permit the passage of a male infant of the same weight; but in laborious labours there is no method of ascertaining the sex of the infant.

In cases of doubt, therefore, a fair trial of the powers of nature must be permitted, watching carefully the progress of the case, according to the rules already explained.

When the disproportion is very considerable, the great difficulty is, to ascertain whether it be possible to extract the mangled infant with safety to the parent, and to inexperienced persons it may appear wonderful that so much variety of opinion should prevail upon this question. It may be supposed to resolve itself into a mechanical problem, and many respectable practitioners have considered it as such; it being only necessary, according to their doctrine, to determine to what extent the bulk of the infant can be reduced.

The result of the experience of those practitioners in whom confidence can be placed, is, that in cases of deficiency of space, the whole upper part of the cranium of the infant can, in general, be safely removed by means of the perforator and crotchet, but that the base of the cranium cannot be lessened, and hence the head of an ordinary sized infant must measure four inches in length from the chin to the occiput, between two and a half and three inches in breadth across the base of the skull, and at least one inch a half in depth, reckoning from the root of the nose to the tip of the chin.

¹ The author has been accustomed to illustrate this practical remark to his pupils, by a very simple mechanical demonstration. He first shows the smallest possible aperture through which the fœtal head of the ordinary size can be squeezed, and he then covers the head with a common towel, and proves the utter impossibility of its then passing through the same aperture. He does not believe that the addition of a common towel can increase the diameter of the head more than the sixteenth part of an inch.

Dr. Hull, in his *Observations on Mr. Simmons's Detection, &c.*, published in 1799, in relating a set of experiments instituted to ascertain the smallest space through which a dead infant could be extracted through apertures made in a strong board, says, (page 401),—

“I then procured a fœtus of moderate size, which had been brought into the world by the perforator and crotchet, through a pelvis very much contracted, in consequence of malacostion. Its head had been necessarily very much reduced in order to accomplish the delivery, and I diminished it still further by cutting and breaking away the whole of the parietal bones, and that part of the frontal bones which remained elevated above the base of the cranium. I also bent the os occipitus a little behind the foramen magnum, (because I know this may be easily done in delivering with the crotchet,) so that it would either lie back upon the neck, or forward upon the base of the cranium. When thus reduced this fœtus weighed five pounds one ounce. It measured, from the toes to the base of the skull, seventeen inches—from the chin to the top of the nose, when very strongly compressed by the callipers, one inch and a half, and nearly half an inch more from the chin to a line drawn from the top of one orbit to the other; from the external canthus of one orbit to that of the other, two inches and three quarters, and the same nearly from one zygomatic arch to the other; from the top of the nose to the posterior part of the condyles of the os occipitus, three inches and three quarters.”

Professor Burns says (eighth edition, page 467), “I have carefully measured these parts placed in different ways, and entirely agree with Dr. Hull, a practitioner of great judgment and ability; that the smallest diameter offered is that which extends from the root of the nose to the chin. For in my experiments, after the frontal bones were completely removed and the lower jaw pressed back, or its symphysis divided, so as to let its sides be pushed away, this did not in general exceed an inch and a half.”

Assuming that these calculations are correct, for they have been confirmed by the experience of the author, it follows upon the plainest mechanical principles, that in order that an infant of the ordinary dimensions be extracted by means of the crotchet, there must be, at least, a free space measuring three inches by one and a half. How far it may be *safe* to extract a mangled infant through such an aperture is a consideration to be noticed by and by.

Dr. Osborne, to whose eminence the author has alluded in the first part of this work, believed that he had safely extracted an infant of the ordinary size by means of the operation of embryulcia, through an aperture measuring “only one inch and three quarters at the utmost, and in the widest part, and that only on one side of the projecting sacrum, while the space between it and the symphysis, and on the other side, barely amounted to three quarters of an inch.”

Dr. Conquest of London, in the fourth edition of his *Outlines of Midwifery* (published in 1827), has stated, (page 133,) that “several

instances are authenticated by men of the highest integrity and eminence in the profession, in which children have been delivered after the perforator has been used, although the distance between the pubes and sacrum did not exceed one inch and a half, and in which there did not appear to be more than two inches from one side of the pelvis to the other," which, according to the expressions used, seems to mean from one ilium to the other.

Very different is the opinion of Professor Davis. He says (page 304 of *Elements of Operative Midwifery*), "If we suppose the conjugate diameter not to exceed two inches and a half, the extraction of the basis of the fetal skull will necessarily be attended with much additional difficulty. But if the intermediate space between the symphysis of the pubes and the promontory of the sacrum be presumed to be no more than two inches, then the attempt to extract a full grown child by the natural passages, by means of the crotchets in common use, or by any crotchets used with much force, or for a long time together, would expose the subject of such an operation to no little risk of contusion of the maternal structures concerned in the labour, and therefore the woman herself to the eventual loss of her life. I wish to be considered as making this statement very deliberately, and with due advertence to the opinions of Dr. Osborne and others, who have maintained a contrary doctrine."

Dr. Dewees says (page 573), "By a sufficient diameter, I mean where there is at least two inches in the antero-posterior, and at least three and a half, in the transverse: below this, delivery per vias naturales, I repeat, I believe to be impossible. And it is a moot point, whether, with a diameter of full two inches, &c., the risk to the mother is not as great as the Cæsarean section, yet, in this instance, and with a dead child, the crotchet would merit the preference, as it is apparently the less severe operation, and one that would more certainly meet the public approbation."

With respect to Dr. Osborne's estimate of the dimensions necessary to allow the safe passage of a mangled infant, the author's father proved, above forty-three years ago, that the extraction of an ordinary sized infant through such an aperture is physically impossible, and he publicly called upon Dr. Osborne¹ to extract, in presence of competent witnesses, a mangled infant, through an aperture in a piece of wood or metal, of the shape and dimensions which he had described. The doctor readily accepted this professional challenge, but although he lived sixteen years, after having done so, he never made any further communication on the subject.

The experiments of Dr. Hull, already referred to, are so conclusive in deciding this point, that probably Dr. Osborne himself was convinced of his error. That he really believed, when he published the case of Elizabeth Sheerwood, that he had formed a correct judgment of the apertures of her pelvis, the author has never doubted. But it has always been his conviction that the apparent narrowness

¹ Hamilton's Letters to Dr. Osborne, page 135.

was the effect of the swelling of the soft parts lining the pelvis, and that, in consequence of the reduction of the infant's head, the swelling had subsided before the extraction of the infant was attempted; and upon no other principle can it be explained that, on raising "one side of the fore part of the head, and turning it a little edgeways," he "immediately and easily succeeded" in accommodating the infant¹ and accomplishing the delivery.

Upon what authority Dr. Couquest has been led to believe that a full grown infant has been extracted, through a pelvis measuring no more than an inch and a half between pubes and sacrum, and not more than two inches from one side of the pelvis to the other, the author is at a loss to understand. He has never met with such an allegation in the course of his reading, and he has never seen, in any anatomical museum, a pelvis of an adult female which did not measure more than two inches from one side to the other. The case appears to him to be physically impossible.

Dr. Collins states, (page 302), that "the most defective pelvis he had ever witnessed in the Dublin Lying-in-Hospital measured two inches and a half from pubes to sacrum."

While Dr. Osborne and Dr. Couquest have erroneously supposed that a mangled infant may be extracted in a living woman, through an aperture far less than the same infant could be drawn through a similar aperture cut in a piece of wood or metal, Dr. Davis and Dr. Dewees have erred in the opposite extreme, for there can be no doubt that an infant of the ordinary size, at the full term, may be drawn, by means of the crotchet, through an opening measuring one and a half by three inches.

Whether, under such circumstances, the use of the crotchet be safe for the parent, is a very different question, and seems to have been totally overlooked by Dr. Osborne, who has more than insinuated, that wherever the operation of embryotomy is practicable, it secures the recovery of the parent.

Against this doctrine the author has always protested, warning young practitioners that Dr. Osborne's estimate of the safety of the operation of embryulcia is founded upon data the fallacy of which can be readily explained; for, in the *first* place, in the greater number of crotchet cases during Dr. Osborne's professional life, the obstacle was so trifling, that the opening of the cranium, and the discharge of a small portion of its contents, enabled the practitioner to extract the infant with comparative ease and safety.

Secondly, In cases of greater disproportion, where much force was required, and where the patients had sunk in the progress of lying-in, practitioners abstained from putting their ill success upon record, or persuaded themselves that the fatal event had arisen from some other cause than injuries from the delivery. And,

Thirdly, In cases of very great disproportion, women were allowed to die undelivered, from the unwillingness of the practitioner to incur responsibility. Dr. Hull has recorded some remarkable

¹ Osborne's Essays, page 255.

evidences of this fact, as having happened in Manchester within his knowledge. Dr. Osborne's *Essays on Laborious Labours* were published in 1792, and the author's father, in the same year, felt himself compelled to address a series of letters to the doctor, for the purpose of correcting certain misrepresentations and errors in that work. In reference to Dr. Osborne's opinion on the safety of the operation of embryotomy, expressed in the following words, (page 442), "I will venture to assert, that instead of only four or five women being saved out of fifty," (where the operation of embryotomy had been had recourse to), "the proportion is at least reversed, and the number stated in the (Professor Hamilton's) quotation to be saved, is at most the number lost." The author's father replied, (page 68), "The fact probably is, that in this respect we are both equally wrong in our calculation."

Accordingly, within little more than a year from that date, Dr. Clarke published his *Reports of the Practice in the Dublin Lying-in Hospital*, by which it appears that, in forty-nine cases where he had been obliged to tear away the infant piecemeal, sixteen of the women died, being one in three.

These considerations occurred to the author at an early period of his professional life, and he has always held that, in those deplorable cases of great deficiency of space, the safety of the operation, as well as its practicability, should be ascertained before proceeding to so dangerous an expedient.

He has by experience been led to believe, that the safety depends upon the resistance being confined to one portion of the passage, that is, to the brim, or to the outlet, or to any intervening point, as in the case of a tumour. His meaning may be best illustrated by the two following cases.

Dr. Leffant and Dr. O'Brien, in the year 1807, sent for the author one night at a late hour, to see a poor woman in labour, in whom the pelvis had apparently the shape and apertures so similar to those of one of the subjects on whom the Cæsarean operation had been performed in the Royal Infirmary of Edinburgh, that those gentlemen instantly recognised the similitude. He learned that the woman had been rickety in her childhood, but had been in good health previous to labour. On examination, the aperture at the brim of the pelvis was estimated at little more than an inch and a half between pubes and sacrum. The outlet seemed sufficiently capacious, and the cavity was so shallow, that it did not require the full length of the fore-finger to measure the space between the point of the coccyx and the promontory of the sacrum.

The author informed the gentlemen that this case furnished, in his opinion, a fair example of the lowest dimensions permitting the operation of embryotomy with safety to the parent, because the resistance was limited entirely to the brim, and therefore, that the injurious pressure consequent upon the operation would be confined to a narrow band.

Thus reasoning, he opened the head of the infant about midnight,

and between nine and ten o'clock next morning he proceeded to the extraction. The operation was the most difficult he had ever undertaken, requiring such an exertion of force, that he was literally carried home in a sedan chair, drenched and exhausted, at half-past two in the afternoon. And yet this woman's recovery was so rapid, that, at the end of five days, she expressed an anxiety to be employed as a wet-nurse.

Let this case be contrasted with that of a poor woman, a patient in the Edinburgh General Lying-in Hospital, above forty years ago. Mrs. Scott, aged thirty years, became in labour of her fourth child at three o'clock, A. M., March 31, 1795, and it was supposed that the liquor amnii was spontaneously discharged in the course of two hours. The pains having become very strong and frequent soon after this, the state of her pelvis was minutely examined, for it had been previously ascertained that she had been for some years affected with malacostion, and that she had not only lost greatly in her stature, but had also become almost incapable of locomotion. It was found that, at the anterior part of the pelvis, the rami of the pubes and ischia approached so nearly, that it was with difficulty the fore-finger could be passed between them. The spinous processes of the ischia, however, were about two inches distant from each other, and posteriorly the point of the coccyx seemed at least two inches distant from the tuberosities of the ischia. The brim was greatly altered in shape. In its centre a triangle could be traced, each angle of which was distant about an inch and a half from the other, and towards the ilia, on each side, the space was evidently narrower. No part of the infant could be felt.

The pains continued with great force till a little past ten, A. M., when the head of the infant was found to press on the brim of the pelvis. Soon after this a consultation was held, when it was determined to wait for a few hours to ascertain whether the strong uterine contractions might force the infant farther into the pelvis.

About a quarter past eleven, A. M., the pains suddenly ceased, followed by vomiting, feeble pulse, pallid countenance, great exhaustion, and pain of the belly, aggravated on being touched. But there was no discharge of blood per vaginam, no breathlessness, nor could the limbs of the fœtus be felt through the parietes of the abdomen. On examination, it was ascertained that the head of the fœtus, covered by the membranes, was resting upon the brim of the pelvis.

As it was hoped that the apparent exhaustion was the effect of the violent sufferings at the commencement of labour, suitable means to support the strength were administered, but the symptoms of exhaustion having continued and increased, it was determined at half past one, P. M., to perform the operation of embryotomy, it being supposed that the apertures of the pelvis were such as to render that operation practicable.

This attempt, however, failed. As soon as the perforator was pushed forward, the head of the infant completely receded, a clear proof that the uterus had burst. No further attempts were made

to deliver this poor woman, and she lingered on till a quarter past eight, A. M., of the 2d of April.

After death it was found that the uterus had burst at the left side. The rupture was in the longitudinal direction, not transverse, was seated in the cervix, and extended apparently about four inches. The fœtus, which was quite putrid, was on the left side of the belly, so completely enveloped by the membranes, that it occupied the least possible space. The lobulated surface of the placenta formed the outer surface of the ovum on the right side. It appeared that the perforator had penetrated only the external lamella of the membranes. There was no liquor amnii.

The following are the dimensions of the pelvis:—At the brim, from the centre of the sacrum to the most diverging point of the pubes $3\frac{1}{2}$ inches; from the same point to the part at which the pubes approximated, $2\frac{1}{4}$ inches; from the sacrum to the linea innominata at the top of the acetabulum, $1\frac{5}{8}$; therefore, the short diameter at the brim was, for the extent of an inch, $2\frac{1}{4}$ inches, but in the remainder of the space only $1\frac{5}{8}$. At the outlet the space between the tuberosities of the ischia was $\frac{5}{8}$ of an inch. The spinous processes of the ischia were distant $3\frac{1}{6}$. The point of the coccyx, when drawn back, was distant from the junction of the ischia $2\frac{1}{2}$ inches, and the same from the tuberosity of the ischium on the left side, but on the right side it was half an inch less. The depth of the pelvis, both anteriorly and posteriorly, was $4\frac{1}{2}$ inches.

On considering the apertures of the pelvis of this poor woman, it is evident that a mangled infant could have been extracted through them, but no rational practitioner could have expected the mother to have survived such an operation. It may be asked, then, why an attempt was made to use the crotchet? As there was no evidence of the infant being alive, it was deemed eligible to accomplish the delivery, as the circumstance of a woman dying undelivered could not fail to alarm the other patients in the hospital, which at that time was a new institution, and had been the subject of sectarian opposition.¹

From these premises the author considers himself warranted to conclude—

Firstly, That if the deficiency of space be confined to one portion of the passage, viz. either the brim or the outlet, or the cavity, and if it leave a free aperture admitting the extraction of a mangled infant of the ordinary size, the operation of embryulcia may be safely accomplished. And,

Secondly, That if the resistance extend throughout the whole passage, more especially if the cavity of the pelvis at its anterior part be deeper than usual, that operation, though mechanically practicable, cannot be performed with safety to the parent. This

¹ In order more fully to illustrate the practice in those deplorable cases, the author has added, in an appendix, diagrams of the several degrees and varieties of diminished apertures of the pelvis, taken from specimens in his own collection. [These we have omitted in this edition.—*Ed. Lib.*]

practical distinction he holds to be of much greater importance than has hitherto been supposed, and therefore he is most anxious to impress it on the notice of the profession.

Happily cases of extreme disproportion occur rarely, and it is a most fortunate circumstance that such cases are readily recognised. That there have been some deplorable instances of mistakes, and of injuries from ill directed investigations, even within these twenty years, the records of several publications incontestably prove.¹

To the less experienced members of the profession, it may therefore be useful to state the cautions which the author has adopted, in ascertaining the precise shape and apertures of the pelvis in cases of great disproportion.

Firstly, His great object always has been, to put the patient to as little pain as possible. And therefore,

Secondly, If the outlet of the pelvis be so defective as to preclude the safe extraction of a mangled infant, he has never attempted to ascertain the dimensions of the brim. Accordingly, in the last case where he had to perform the Cæsarean operation, he found the aperture of the outlet incapable of permitting the introduction of a half crown piece, and he deemed any further examination both unnecessary and injurious.

Thirdly, Where the deficiency of space is principally in the brim, he has considered it justifiable to introduce the hand into the vagina for the purpose of distinguishing the shape and dimensions of the aperture, and also the depth of the pelvis; but he holds that this examination should be made only once for all.

Every practical man must know, that the most perplexing cases of laborious labour which occur, are those in which the disproportion is trifling; and therefore, at the risk of appearing prolix, the author, in addition to what he has already said on the subject, must state, with great deference to Dr. Collins, that the rule laid down in the following words may mislead the inexperienced, and ought to be expressed under many modifications. He says (page 17),—

“The difficulty in such cases, is caused by a disproportion between the child’s head and the pelvis; and except where this is very great, no individual can foretell whether the uterine action may be sufficient or not to expel the child; therefore, the most certain proof we can have of such disproportion existing is, the head remaining stationary for a number of hours after the dilatation of the mouth of the womb, uterine action during this time continuing strong. This is a more certain proof than any derived from the most accurate examination; for though, in this way, we may be able to inform ourselves, with tolerable correctness, as to the size of the pelvis; yet the size of the child’s head, its degree of ossification, or the amount of compression it may undergo from uterine action,

¹ See particularly, Dr. Kinder Wood’s case, London Medico-Chirurgical Transactions, vol. vii. page 264.

Professor Davis’s Elements of Operative Midwifery, page 49.

never can be correctly ascertained. Let it be carefully recollected, at the same time, that so long as the head advances ever so slowly, the patient's pulse continues good, the abdomen free from pain on pressure, and no obstruction to the removal of the urine, interference should not be attempted unless the child be dead.

Again, the author must repeat and enforce his admonition to practitioners, to continue not only in attendance, but also to pay unremitting attention to the effect of the labour throes from the commencement to the termination of the second stage of all labours. Many of the cases in Dr. Collins's valuable work evince the vast importance of this precept.¹

From reading Dr. Collins's observations on the use of the stethoscope in laborious labours (page 18), and finding it repeatedly stated, in the details of his recorded cases, "that the child being dead, as indicated by the stethoscope, the head was lessened, &c." his impression is, that in cases of disproportion, it was the doctor's rule to delay giving assistance till the death of the infant was placed beyond doubt by means of the stethoscope. If this interpretation be correct, the author feels compelled to express his disapprobation of the practice.

Admitting the impossibility of the infant being born alive through the natural passages, it is surely the bounden duty of the practitioner to relieve the poor woman as soon as the necessity for artificial delivery is ascertained. In many cases, if the practitioner were to wait for the death of the infant in utero, the life of the parent would be placed in great jeopardy. Indeed, several women seem to have suffered in the Dublin Lying-in Hospital, in consequence of procrastination.²

Whenever the necessity for interference in those deplorable cases has been ascertained, the author has recommended and practised immediate delivery.

Having thus explained the means of distinguishing cases requiring the operation of embryotomy, it would have been unnecessary to enter into any details respecting the operation, were it not that certain mechanical contrivances for its performance, calculated, as the author believes, to mislead young practitioners, have been recommended by gentlemen of deserved professional eminence.

For this shocking operation, the instruments which the author has always used are Orme's perforator, and a crotchet made entirely of steel. The cutting part of the perforator is trocar pointed, with equilateral edges. The point of the crotchet is so blunt, that if it slip in the course of the operation, it can be received between the fingers of the operator with impunity.

Opening the head with the perforator is, in cases of extreme dis-

¹ Collins, page 75, No. 6; page 77, No. 9; page 80, No. 15; page 103, No. 33.

² *Vide* Collins, page 300, No. 32; page 303, No. 10; page 462, No. 49; page 464, No. 150 and 173; page 469, No. 425; page 470, No. 509; page 471, No. 555 and No. 584; page 472, No. 626; page 473, No. 665.

proportion, apparently both difficult and dangerous. Dr. Osborne¹ says, "even the first part of the operation, which, in general, is sufficiently easy, was attended with considerable difficulty and some danger. The os uteri was but little dilated, and was awkwardly situated in the centre and most contracted part of the brim of the pelvis." It is a fact, that where the brim of the pelvis is very narrow, the natural contractions of the uterus do not dilate its orifice to a greater extent than that of the aperture at the brim, but the author has always found, that after a certain degree of dilatation, gentle pressure on its edges, by means of two fingers during each pain, in a very short time clears the head from this impediment.

Where the disproportion is slight, after the cranium has been opened, and its contents completely removed, it is proper to proceed to extract the infant, but where the apertures are merely such as to permit the safe performance of the operation, an interval must be interposed between the opening of the head and the extraction of the person.

Certainly Dr. Osborne had the merit of first pointing out to the profession the importance of this practice, showing that two advantages result from the delay, viz. the renovation of the patient's strength, and the putrefaction of the infant, thus affording a probability of uterine contraction assisting the practitioner, and of the mangled infant being more easily moulded to the passage.

A much more important effect, however, results from this practice: viz. the subsidence of the swelling or incipient inflammation of the soft parts lining the pelvis, which must be the necessary consequence of the resistance to the progress of the infant from disproportion. The author has never found it necessary to wait longer than from twelve to fifteen hours, as in all the cases he has hitherto attended, uterine contractions came on within that space of time, and he always considers it his duty to take advantage of them.

When it is deemed proper to begin the extraction of the infant in those cases of great deficiency of space, the crotchet will be found a much more powerful means than the ingenious contrivances recommended by Sir Thomas Bell, Professor Davis, and Dr. Conquest, foras the whole upper part of the infant's head is necessarily removed, there are only two parts which afford a sufficient hold, viz. the foramen magnum, and one of the eye sockets, and the instruments alluded to are quite inapplicable to those parts.

Dr. Osborne preferred the foramen magnum, but he himself admitted, that it is very difficult to get the crotchet into that part, whereas, by fixing it in one of the eye sockets, the practitioner is enabled to bring the face foremost, by which the infant takes up the least possible room.²

Perhaps it is unnecessary to state, that in conducting the extraction, advantage is to be taken of the labour pains, and the head of

¹ *Vide* Osborne's Essays, page 245.

² Even in cases where the infant is in the most putrid state he has found the eye socket to afford a perfectly steady hold.

the infant is to be so directed that it shall be drawn through the widest part of the aperture, guarding carefully the point of the crotchet, by means of two fingers of the left hand.

Those melanchöly cases, where it is impossible to bring the mangled infant with safety through the natural passages, require the Cæsarean operation; for the proposals hitherto suggested, for superseding that very dangerous expedient, must appear to every practical man to be quite inadequate. Thus, the division of the symphysis pubis, called the Sigaultian operation, has never been successful, but in cases of such trifling disproportion that the induction of premature labour would have secured the birth of a living infant without exposing the parent to any hazard.

As to combining the Sigaultian operation with that of embryotomy, the proposal was obviously absurd, and accordingly, the person who suggested it, when called to a case presenting the very obstacles which he himself had represented as warranting such an expedient, had neither the courage to perform it, nor the candour to confess that he had made a rash proposal.¹

One of the author's pupils sent him a letter dated February 17, 1805, a copy of which is inserted in the Appendix, proposing that, in cases of extreme deformity, the infant in utero should be cut into small fragments by means of a mechanical contrivance which he suggested and delineated.

Twenty years after this, Professor Davis of the London University recommended a similar expedient as a substitute for the Cæsarean operation (*Elements of Operative Midwifery*, page 305), and for the accomplishment of this, he contrived an instrument "combining the principles of a punch and a pair of scissors."

While the author gave, in 1805, all due credit for the ingenuity of his pupil's proposal, he stated his belief of the impracticability of such an operation as cutting the infant into fragments in cases of such deficiency of space as prohibits the operation of embryulcia. He is compelled to urge the same objection still more strongly against Professor Davis's proposed operation with the osteotomist. It must be quite obvious, from the explanations in the preceding pages, that if the apertures of the pelves can admit of the introduction of this instrument, "together with the point of an index finger to feed it with successive purchases of bone," there must be sufficient space to extract a mangled infant by means of the crotchet. In the author's collection, there are pelves of individuals who had been actually in labour, through which it is demonstrable that Dr. Davis's osteotomist and an index finger could not have been introduced.

Any extended observations on the Cæsarean operation are deemed unnecessary, cases requiring that resource being so rare. That in some very deformed women the only alternative is having recourse

¹ The patient had the Cæsarean operation performed on her by Dr. Wood of Manchester.

to that expedient, or allowing the poor creature to die undelivered, is placed beyond all possibility of doubt, both by the preparations in his possession, and by the cases which he has actually attended. If, under such circumstances, where the chances are so much against the recovery of the mother, the sufferings of the patient were aggravated by the operation, it might induce a humane practitioner to hesitate about its performance; but, in point of fact, the Cæsarean operation gives, comparatively speaking, little pain—the whole suffering being limited to a few minutes. The two individuals on whom the author had to perform that operation, expressed, in the presence of many witnesses, their gratitude for the speedy relief which they had obtained.

Professor Lizars' proposal to raise the temperature of the apartment in which the operation is performed, to between 80° and 90° of Fahrenheit's scale, seems well calculated to lessen the injurious effects of opening the peritoneal cavity.

He has only to add, that having deliberated upon this subject from the earliest period of his professional life, he is convinced, not only that cases occasionally occur where there is no other resource than this dangerous expedient, but also that there are cases where it ought to be preferred to tearing the infant away piece-meal—in other words, that there are cases, as already explained, where the operation of embryulcia might be practicable, but could not be safe.

SECTION IV.—ON THE INDUCTION OF PREMATURE LABOUR.

Where married women, in whom the apertures of the pelvis fall under the ordinary proportions, have had the misfortune to have their first infant necessarily extracted piecemeal, they must feel anxious to have some means adopted, in the event of future pregnancy, for preserving their infant, and for lessening their own sufferings and danger.

It has been clearly ascertained, that no regulation of the diet of the parent can retard the growth of the fœtus, but it is well known, that infants born five or six weeks before the completion of the ordinary term of pregnancy, may, with due care, be reared to maturity, while their bulk is so much under the ordinary size, that they can be safely expelled through an aperture through which a full grown infant cannot pass.

These considerations suggested to British practitioners the propriety of inducing premature labour in cases of deficient aperture, and it is recorded¹ that this subject was taken into solemn deliberation about the middle of last century, at a meeting of several of the most respectable London practitioners. On that occasion, the morality, the safety, and the utility of the practice were carefully investigated.

There was, it is said, no difference of opinion respecting the morality and the safety of the practice. Indeed, the morality could

¹ Denman, vol. ii. p. 175.

not be doubted, for the object is to preserve the life of an infant, which, if allowed to remain to the full period, could not be born alive. And as to the safety, there appeared every reason to presume, that the sufferings of the patient must be greatly lessened in consequence of the diminished size of the infant. The late Dr. Merriman first called in question the safety of the operation, but the cases on which he founded his doubts on this point, were evidently cases of accidental coincidence, for the safety of the practice is now fully established.

With respect to the utility, there seems also to have been no difference of opinion. The size of an infant who has only resided seven months and a half in utero, is so much under that of one at the full time, that it can be readily and safely expelled through a passage incapable of admitting the transmission of a full grown infant.

Foreign practitioners have denied the utility of the practice, and have accordingly repudiated it, upon the supposition that the infant must generally be the victim. Mons. Baudelocque says, paragraph 2011.—“L'on ne rencontre presque jamais ces dispositions favorables au terme de sept ou de huit mois, chez les femmes dont la mauvaise conformation du bassin rend l'accouchement impossible au terme de neuf, et conséquemment chez lesquelles il semble qu'il seroit avantageux de le forcer à se faire prématurément. Le col de la matrice, à l'époque du septième mois, est rarement entre-ouvert, et il est encore fort épais et très-ferme. Les douleurs, ou les contractions de ce viscère, ne pourroient alors s'obtenir que par une irritation mécanique assez forte et longtemps continuée; mais étant contraires au vœu de la nature, ces douleurs ou ces contractions utérines cesseront le plus souvent au même instant qu'on discontinuera de les exciter de cette manière. Si on ouvre la poche des eaux avant que l'orifice de la matrice ne soit assez ouvert pour le passage de l'enfant, et l'action de ce viscère assez forte pour l'expulser, les douleurs se calmeront de même pour un temps, et le travail qui se déclarera dans la suite sera très-long et très-fatigant; l'enfant, privé des eaux qui le protégeoient contre l'action de la matrice, étant alors pressé immédiatement par cet organe, sera victime de cette action, avant que les choses ne soient favorablement disposées pour son issue, et on perdra le fruit de tant de sollicitudes et de peines.”

The experience of British practitioners has fully contradicted the above recited speculations of Mons. Baudelocque and other foreign practitioners. Thus, Mr. Barlow of Bolton, has stated,¹ that in the case of five deformed women, he had induced premature labour sixteen times, and that in two of them premature labour had taken place spontaneously. Twelve of the eighteen infants were born alive. Dr. Denman recommended the operation in twelve cases, and seven infants were saved. Dr. Merriman, senior, records,² that

¹ Medical Facts and Observations, vol. viii.

² London Medical Review and Magazine for 1814.

in ten cases of premature labour, he had succeeded in saving four infants. Mr. Marshal, surgeon in London, saved one infant in four. Thus twenty-four infants out of forty-four were born alive. The result of Dr. Merriman's practice has been,¹ that in thirty-three cases of labours prematurely induced in the eighth month of pregnancy, on account of extreme distortion of the pelvis, twenty-one infants were still-born, four were born alive, but incapable of living above a few hours (in one of those cases, there were twins), and nine were born alive, and were capable of being reared.

In addition to those facts, the author can prove that the principle upon which this practice has been objected to by foreigners is quite erroneous. At an early period of his professional life, he certainly did consider those objections to be highly plausible, and therefore he endeavoured to find some means of inducing premature labour without rupturing the membranes. Adverting to the fact, that whenever the liquor amnii is accidentally discharged, at any period of pregnancy, uterine contractions naturally follow within a limited time, it appeared to him that the only explanation of the circumstance is, that the rupture of the membranes destroys the equilibrium between the contents and the containing parts of the uterus.

Thus reasoning, he tried in the very first case,² where he deemed it his duty to induce premature labour, the effect of separating a portion of the decidua from the cervix uteri, and labour followed within a few days. In some cases a week elapsed before any signs of labour came on, and in those cases he introduced a male catheter with an open extremity between the surface of the uterus on its posterior part, and the decidua, to the height of about five inches, and then, by means of a silver wire, he punctured the membranes, and drew off about a table spoonful of the liquor amnii. Labour pains regularly came on within twenty-four hours. He is now however convinced, from the experience of the last ten years, that if there be a sufficient portion of the decidua separated from the cervix uteri, there is no occasion for the introduction of the open male catheter.

Previous to the 26th January, 1836, the author brought on premature labour in twenty-one individuals, on account of defective apertures, viz., in fourteen once,—in one twice,—in three thrice,—in two five times,—and in one ten times. Of the forty-five infants

¹ *Vide* Merriman's Synopsis, third edition, page 172.—Dr. Merriman states a very remarkable fact, viz. that of thirty-three cases of labour prematurely induced, there were fifteen preternatural labours.

² Professor Davis, in his Principles and Practice of Obstetric Medicine, (page 1150), says, that "the method of performing the operation with the finger was first suggested and adopted by the late Mr. Jacob Jones of Finsbury Square. It was performed for the first time, and in peculiar circumstances, by that gentleman, on St. George's day, THIRTY-SEVEN YEARS AGO." The author takes the liberty to state, that he performed the operation for the first time in the year 1795; and that, for several years, he stated, in lecturing, that he declined describing publicly the precise method of performing the operation, but should mention it to any gentleman privately, who might wish to know the particulars.

thus prematurely brought into the world, forty-one were born alive. The death of the four still-born can be readily accounted for. In one case, the patient, a stout country woman, had had the infant torn away piecemeal on three different occasions, by experienced practitioners. After having had a living child¹ under the author's care, by the induction of premature labour, she again came to Edinburgh for the purpose of being confined. Unfortunately she had mistaken the term of her pregnancy by one complete month. After the labour pains had continued with great violence for some hours, without advancing the infant beyond the brim of the pelvis, it became necessary to open its head. Both the utility and the safety, however, of this operation were strongly illustrated by this untoward occurrence. On the three former occasions, where this poor woman had had to submit to the operation of embryotomy, many weeks elapsed before she could even be taken out of bed, but her recovery was so rapid, under the author's care, evidently from the infant having been under the ordinary size, that she was enabled to return home in the course of a fortnight.

This patient again came to Edinburgh, for the purpose of having premature labour induced. From some mismanagement on the part of the attendants, the author was not sent for till the breech of the infant was actually protruded, and the pulsation in the chord had ceased. The other two cases of still-born infants were also breech presentations.

In the practice of Mr. Moir and Dr. John Moir,² premature labour was induced twelve times on six women. Nine of the infants were born alive, and the cause of death of the three still-born infants could not be attributed to the operation. In two cases, the size of the infant proved that the woman had been between eight and nine months pregnant, and in one the breech was protruded for above a quarter of an hour before Dr. Moir's assistance was procured.

From the above statement, it is evident that, of seventy-seven cases of premature labour artificially induced by the previous rupture of the membranes, thirty-three infants were born alive, and that of fifty-seven infants brought forward in the same way, the membranes having been preserved entire, fifty were born alive. By the one practice, less than one half was saved, while by the other more than seven eighths were born alive. Thus, the objections urged by foreign practitioners against this practice, are contradicted by reason and by experience.

With great confidence, therefore, the author can recommend this practice, in all cases where the deficiency of space, in the apertures of the pelvis, does not fall under two inches and a half.

Considering the facility and the safety with which the operation may be performed, where the apertures of the pelvis are not very

¹ This individual the author saw as a stout young woman in the twentieth year of her age.

² Surgeon and assistant physician to the Edinburgh General Lying-in Hospital.

much contracted, the author has, within the last few years, considered that it might be proper to advise this operation in some cases where there is no actual deficiency of space, an opinion which, to many practitioners, may at first appear rather paradoxical.

It is well known that in some individuals, the infant in utero is apt to acquire an extraordinary size. Thus, although the usual weight of a well formed male infant at the full period is ascertained to be seven pounds avoirdupois, the author brought one infant into the world weighing fifteen pounds, and another fourteen and a half; and in the practice of the Edinburgh General Lying-in Hospital, cases every now and then occur of infants weighing from ten to thirteen pounds.

The long circumference of the head of an infant of the ordinary size, viz., a line drawn from the chin to the vertex, passing along the parietal protuberances, is found to be from thirteen to fifteen inches, but that of an infant born in the Edinburgh General Lying-in Hospital, of whom the weight was eleven pounds and a half, was ascertained to be seventeen inches. It must be perfectly obvious that an infant weighing above ten pounds cannot pass easily through the ordinary apertures, and therefore, where experience has shown in any individual that the infant is apt to attain an unusual size, the induction of premature labour about the eighth month would greatly lessen the sufferings of the parent, and would secure the safety of the infant.

Within these few months, the author's opinion upon this subject has been fully confirmed by a case which he has attended. The patient, though a very healthy well formed young person, not over twenty-two years of age, had so severe a time in her first delivery, in consequence of the great size of the infant, that it became necessary to employ the forceps. In her second pregnancy, great attention was paid to the regulation of her diet, but the infant proved so large, though the delivery happened within two days of her reckoning, that it became again necessary to employ the forceps, the first time the author has ever had occasion to have recourse to such an expedient twice in the same individual. The long circumference of the infant's head in that case was seventeen inches.

It would be uncandid if the author were to conceal from the junior part of the profession, that the induction of premature labour, in cases of deficiency of space, and even of dreaded increased growth of the infant, involves such a degree of responsibility, that it should scarcely ever be undertaken by any other than experienced practitioners, and those too, residents in a great town, for such cases require unremitting attention and watching. No other than one who has had the charge of patients under such circumstances, can understand the anxiety which they occasion. The author has repeatedly had the dread of the uterus bursting impressed upon his mind, and he believes that nothing but steady counter pressure upon the os uteri, from the moment of the rupture of the membranes till the head passed the resisting points, could have prevented that accident in several cases which have been made under his charge. Dr.

Ramsbotham has recorded a melancholy instance (page 388, Part i.) of this consequence of the induction of premature labour.

Dr. Merriman's observations, (Synopsis, third edition, page 172, *et seq.*) on the cautions to be observed in the induction of premature labour, deserve the attentive consideration of every practitioner. On some minor points, indeed, the author entertains a different opinion from that of his respected friend. In particular, he must consider the dread of preternatural labours occurring frequently in such cases to be ill-founded, for out of fifty-seven cases under the author's care, and that of the medical attendants of the Edinburgh General Lying-in Hospital, there were only five such, and of those four were breech presentations. In the other case, the shoulder presented, and when this was discovered, the membranes being still entire, the infant was extracted alive within less than ten minutes.

Even admitting that, in the ordinary course of practice, there should occur seventeen cases of preternatural presentations in seventy-eight cases of premature labour,¹ that would, in the author's opinion, be an argument in favour of the induction of premature labour, for nobody can doubt that it is easier to turn an infant weighing six pounds than one whose weight is seven pounds. Dr. Merriman seems to suppose, that if an upper extremity present, the position of the infant may be spontaneously altered in the course of a few days, but this is quite at variance with the author's experience.

ON PRETERNATURAL LABOURS.

By preternatural labour is meant every case where any other part of the infant than the head is forced foremost, and it is now ascertained, that from two to three such cases occur in every hundred labours.

The usual arrangement of preternatural labours into two orders, viz. presentations of the lower, and presentations of the superior extremities is founded on the fact, that in the former cases the natural contractions of the uterus may safely complete the delivery, whereas, in the latter, such an event is more to be wished for than expected.

On the means by which preternatural labours can be distinguished, the author has no new observation to make, it being sufficient to remark, that no man can practise with safety who cannot readily distinguish those cases at an early period of the labour, or at least before the rupture of the membrane.

For the appropriate treatment of preternatural labours, the first object is to determine in what manner the infant can be adapted to the passages with the greatest facility to the parent, and with the most probable safety to its life. When the author began practice,

¹ Medico Chirurgical Transactions, vol. iii. p. 137.

he was taught that, with those views, the fore part of the fœtus should be turned to the back of the mother, and minute directions were given for accomplishing this object.

In the year 1788, a case occurred in the lying-in ward of the Royal Infirmary, where the breech presented, and where the delivery, though the infant was of a large size, proved so easy and expeditious, that the author's attention was particularly directed to it. He found that the belly, the breast and the face (of the infant) passed successively along the sacro iliac synchondrosis of one side, and that when the chin came in contact with the coccygæi muscles, and sacro-sciatic ligaments, the face turned into the hollow of the sacrum. On considering the subject, he saw at once that in this direction, the infant occupies the least possible space, and of course, passes with the greatest safety and facility, and from that time, he has invariably practised, as well as taught, that in the management of every case of preternatural labour, the infant should, in the progress of its extraction, be brought in that direction.

Accordingly, in his *Select Cases of Midwifery*, published in 1795, page 89, he said, "In every case where the feet are brought down, the toes should, in the progress of extraction, be turned into such a position, that the belly, the breast and the face, shall be made to pass in succession along the nearer sacro-iliac synchondrosis. After the arms are disengaged, the face can be readily turned into the hollow of the sacrum."¹

It is not surprising that Dr. Denman, whose works seem still to continue to guide English practitioners, should not have duly appreciated this deviation from the old practice, because he had retired from the mechanical department of the profession before these observations were published. He says, (in his second volume, page 221, published in 1801),—"The directions given on this occasion are, that we should make the turn beyond the mere reduction of the back of the child to the pubes, and then revert it to a certain degree, by what may be supposed equivalent to a quarter turn. But such rules being very complex, are more apt to create confusion than to be of use, and are not founded on practical observation, but on an erroneous opinion that the head of the child could be extracted only, or most commodiously, when the face of the child was turned toward the os sacrum of the mother. Whereas, it is now well known that the head of the child will pass through the pelvis, with one ear to the pubes and the other to the sacrum, or in different degrees of diagonal direction regarding the cavity, and that it is not found to proceed exactly alike in any two labours."

¹ His belief at the time was, that this discovery of the most favourable position in which the infant might be brought forward in preternatural labours was original, and he regarded it as of great importance, because, at the period alluded to, the calculation was, that one half of all the infants brought forward preternaturally were lost in the birth.

When Heath's translation of Baudelocque's work appeared in 1790, the author was surprised to find that Mons. Baudelocque had explained the mechanism of those cases very accurately in the year 1780. That first edition of his work was little if at all known in Britain.

Even Professor Davis seems to have concurred in these observations of Dr. Denman, disregarding not only the doctrines of Baudelocque and Gardien (including those of the author, published in 1795,) but also the testimony of Madame la Chapelle respecting the cases of preternatural labours which occurred in the Maison d'Accouchemens of Paris, between 1812 and 1820.¹ At least, this is the inference which the following quotations from his late publication naturally suggest. He says (page 1001),—"From what has been already stated, it must appear quite obvious, that the required change of position should consist in placing the child's head in such a situation as shall cause the face to be determined to the back of the mother, before it shall commence its descent into the cavity of the pelvis." And in a subsequent part of the same page, he adds,—“With this power, and at the time stated, he accordingly forthwith proceeds to effect the required movement of the body of the child, so that its face and front surface generally shall be determined towards either of the sacro iliac junctions, or back of the mother.”

Dr. Collins, in his late publication, sanctions this practice. In reference to the opinion of Dr. Denman and others, he observes (page 41), “as soon, therefore, say they, as these parts are expelled, if the back of the child be not towards the mother's abdomen, the practitioner should, in extracting, turn the child, so that the hind part of its head may be towards the pubes.” He adds the following doubtful expressions:—"It is very desirable the child should be delivered in this position, as it renders the getting away of the head much less difficult, yet where there has been no interference by the attendant in the previous part of the labour, he will rarely find it necessary to alter subsequently the child's position, the breech naturally making the turn above alluded to, in its progress.”

From the recorded cases of the first order of preternatural labours, published within these few years, the author is led to infer, that Dr. Denman's opinion respecting the adaptation of the head of the infant to the passages, continues to mislead English practitioners. His allegation, that “the head of the child can be extracted without disengaging the arms,” may lead to much mischief. If the infant, from immaturity, be under the ordinary size, it is so easy to bring down the arms, that it is not worth while dispensing with the rule, and if the infant be of the ordinary size at the full time, it will be found impossible to draw forward the head with safety, without relieving the arms.

¹ She states (vol. ii. page 24), that of 1390 preternatural labours of the first order, in 756 the back of the infant was directed towards the left side of the mother, in 494 to the right side, in 13 to the pubes, and in 26 to the sacrum.

In Baudelocque's fourth edition, published in 1807, there is a table, containing an account of the cases which occurred in the Hospice de la Maternité of Paris, from the 10th December 1797 to the 31st July 1806. In that table it is stated, that out of 348 cases of preternatural labour of the first order, the feet were naturally towards the right side of the pelvis in 204 cases, to the left side in 129, to the sacrum and to the pubes in each respectively in seven cases.

But perhaps Dr. Denman's allegation, that the head of the infant may be extracted though the ears be to the pubes and sacrum, is the most objectionable part of his doctrine. Many cases have fallen under the author's notice where violent efforts had been for hours exerted in vain to extract the head in that way, and where, of course, the infant was lost, and the mother's life brought into jeopardy. In many such cases, the practitioners in previous attendance were surprised to find that the delivery was completed in a few minutes, without any exertion of force, it being only necessary to turn the face into the hollow of the sacrum.

Young practitioners are never to forget, that in every case when the infant is born as far as the head, the disengagement of that part cannot be accomplished with facility or safety, unless the chin be brought in contact with the point of the coccyx.

Having established the general principle upon which all cases comprehended under the first order of preternatural labours should be conducted, a brief notice only of the individual cases will suffice.

FOOTLING CASES.—It sometimes happens that while the patient is out of bed, the membranes suddenly give way, the liquor amnii is discharged, and the feet of the infant are protruded. These circumstances are apt to excite such alarm as to suspend the uterine contractions, and if the practice recommended by Dr. Collins, to "avoid all interference until the hips (haunches) shall have been completely expelled," be adopted, the infant would probably be lost.

Instead of not interfering, the infant's limbs should be wrapped up in a soft warm cloth, and gently drawn forward, shifting the hold according to their advance, till the knees are protruded, when the belly is to be turned towards the nearer sacro iliac synchondrosis,—the navel string to be slackened,—the arms to be disengaged,—(employing two fingers for that purpose),—the face to be turned into the hollow of the sacrum, and the head to be drawn forward by bending the chin up towards the pubes. If the patient have formerly had a child, this operation should scarcely occupy five minutes. Even in a first labour it should not require much more time, for experience proves that the passages yield readily to pressure from within.

BREECH PRESENTATIONS.—These are certainly the most frequent cases of preternatural labour, there being at least two such cases in every hundred labours.

Where the patient has formerly had a child,—where the infant is of the usual size,—and where the passages are of the ordinary dimensions, the management of those cases is abundantly simple, no interference being necessary (unless the membranes have given way at the very commencement of labour) until the perinæal tumour be formed, when the same support is to be given as in natural labour. One buttock of the infant is, in the usual progress, pressed into the orificium vaginæ, and in supporting the parts, is to be pressed up towards the pubes. When the whole breech is protruded, the navel string is to be slackened, and wrapping the protruded parts in a soft warm cloth, the belly is to be inclined (if not

naturally so) to the nearer sacro iliac synchondrosis, and, when the feet drop out, the further procedure is to be the same as in footling cases.

If the liquor amnii be discharged at the commencement of labour, the edges of the os uteri, whenever the infant comes into strong contact with them, must be carefully supported by means of two fingers during every pain, till the breech passes through them. By this simple method, the dilatation of the uterus is promoted,—the sufferings of the patient alleviated,—and the impaction of the infant prevented. If it be the patient's first child, copious bleeding, wherever the circumstances will permit, will contribute greatly to the facility of the delivery, and to the safety of the infant.

Occasionally it happens that the breech does not enter the pelvis, notwithstanding regular pains, and the dilatation of the uterus being completed within the proper time. This may be occasioned either by the too large size or the malposition of the infant, or by deficiency of space at the brim of the pelvis.

In either case, the appropriate practice is to administer a full opiate (that is, from sixty to eighty minims of tinctura opii), and in from twenty to thirty minutes to pass up the right hand, during an interval between the pains, and by gently pushing up the breech, to bring down one of the feet, thus making it a half footling, half breech case. It will be found, that by accommodating the infant to the apertures, even where there is a deficiency of space, it may be extracted without mutilation. The author can prove, that on several occasions he extracted, with safety to the patient, a full grown infant entire, in presence of competent witnesses, where the distance between the pubes and the sacrum did not exceed two inches and a half.

Certainly the most troublesome breech cases which occur in practice, are those where the doubled infant is firmly wedged in the passages with ineffectual uterine contractions. For the management of such cases, the methods commonly recommended are, hooking a finger in the groin, passing a garter or riband over one of the lower extremities, and applying a blunt hook.

Where the impaction is trifling, either of the two former methods will prove efficacious, and accordingly of two hundred and forty-two breech cases which occurred in the Dublin Lying-in Hospital during Dr. Collins's incumbency as master (viz. seven years), there was only one case where the use of instruments became necessary. In the practice of the author for the last forty years, he has had no occasion to use any mechanical means in such cases, where he has had the charge of the patient from the beginning of labour.

Every practitioner in extensive practice must acknowledge, that cases now and then do occur where neither the fingers nor a ligature can be of any avail in advancing the infant, of which Dr. Ramsbotham has recorded several interesting instances.¹ And even Dr. Collins, although he "strongly deprecates the use of the blunt hook

¹ *Vide* vol. ii. page 28, *et seq.*

and forceps" (page 43), records (page 47), that in one case he was obliged to have recourse to the blunt hook.

Admitting, then, the necessity for applying mechanical assistance in some cases of breech presentation, the question to be decided is, whether the blunt hook or the forceps be the appropriate instrument; and the selection, in the author's opinion, is abundantly obvious.

If a sufficient degree of force be applied, the accomplishment of the delivery may be effected by means of the blunt hook, but not with safety to the infant, for by this instrument the advancing part cannot be lessened in bulk, nor can its position be altered. The author, therefore, cordially concurs with Dr. Collins in his reprobation of the blunt hook in such cases.

Dr. Collins has, to the author's surprise, included in his anathema, an interdict of the use of the forceps as well as of the crotchet. He says (page 44), that "such practice is very likely to be followed by fracture of the thigh bone, or at least considerable injury of the soft parts." That the blunt hook may have such effects is willingly conceded, but that the application of the forceps, if skilfully employed, could either fracture the thigh bone of the infant, or injure the parts of the mother, is quite inconsistent with the experience of the author.

By applying the forceps over the breech of the infant, so that the convex edge shall be towards its belly, the practitioner can lessen the presenting part, without any possible injury to the thigh bones, and can, at the same time, turn round the infant in such a manner as to bring its largest part through the widest part of the aperture, thus overcoming the resistance, and securing effectually the safety both of the infant and of the mother.

The author can truly add, that he has never met with any case of preternatural labour of the first order, where, after having brought the infant's person through the external parts, it became necessary to lessen the head, having found it always practicable, as already stated, to bring the head through an aperture permitting the expulsion of the body.¹

Preternatural labours of the second order are most dangerous and embarrassing. The author regrets to be compelled to object to certain modes of treatment lately recommended and adopted in such cases by practitioners of established and deserved eminence.

Pierre Franco and Ambrose Parry suggested, in the 16th century, that where the infant is discovered to be in any of the positions constituting the second order of preternatural labours, its feet are to be brought down in preference to the head, because the delivery can

¹ He admits that he has been called in to a few cases, where, from the mismanagement of the practitioners in previous attendance, the head of the infant was so strongly wedged in the pelvis, that he found it impossible to accommodate it without the risk of great injury to the mother. As in those cases the life of the infant was already extinct (unequivocally proved by the state of the navel string), he deemed it his duty to lessen the head by perforating the occiput, which he effected without difficulty.

in this way be completed without uterine contractions. When the membranes of the ovum remain entire, this operation may be safely and easily effected, if the os uteri be sufficiently dilated.

Many years ago the author discovered that, under such circumstances, the operation, when necessary, may be accomplished without carrying the hand into the uterus, a method which he believes has not yet been recommended in any professional work. This method is particularly explained in the article on uterine hemorrhage.

When the membranes have burst before the nature of the case is understood (the arm or shoulder, &c., of the infant being the presenting part), it is well known that the operation of turning is both difficult and dangerous. An accidental discovery of Dr. Denman, published in 1785, was, therefore, hailed with great delight by all practitioners who felt reluctant to give pain to their patients, or to incur the responsibility of a difficult and dangerous operation. Dr. Denman discovered, that in some cases of cross births, the uterine contractions gradually force aside the original presenting part, and protrude the breech. This he called the spontaneous evolution of the foetus. But during his own lifetime even, many individuals in public hospitals, as well as in private practice, sunk undelivered, while the practitioner was expecting this effort of nature.

Above forty years have elapsed since the author ventured to raise his warning voice against practitioners being misled by the opinions of Dr. Denman on this subject. His observations, published in 1795 (in *Select Cases of Midwifery*, page 111), were the following:—

“The spontaneous evolution, as Dr. Denman has called it, can only take place where the child lies in a particular situation, viz. where the action of the uterus cannot be exerted on the presenting part, or where that part is so shaped that it cannot be wedged within the pelvis. A practitioner may, therefore, by a careful examination, be able to decide whether the evolution will happen or not. This observation is by no means a matter of speculation, being, on the contrary, of much practical utility; for, if there be signs which indicate the event alluded to, it follows, as a consequence, not only that the natural process is not to be counteracted, but also, that it is to be assisted. Two cases occurred during one year, where the author of these remarks had an opportunity of prognosticating and assisting the evolution, in presence of two gentlemen then attending the professor of midwifery, as annual pupils.”

He has met with no case whatever since that time, which could induce him to alter his opinion; and, in point of fact, the observations published by Dr. Kelly and Dr. Douglas of Dublin, furnish a complete confirmation of the above remarks, although their explanation of the mechanism of the spontaneous evolution is neither so simple nor so intelligible.

Within these few years attempts have been made by Mons. Flammant of Strasburgh, and other foreign practitioners, to restore the old practice (of bringing down the head instead of the feet), which they dignify with the title of the Hippocratic method.

That, on some rare occasions, it may be useful or proper in such cases to make the head the presenting part, the author admits, but these are exceptions to the general rule, which very rarely occur. Thus, in a few cases to which he has been called, on its being discovered, immediately after the rupture of the membranes, that the shoulder was the presenting part, he has succeeded in reducing the shoulder, and assisting forward the head. In those cases, the patients had had a family, and the uterine contractions were remarkably vigorous.

Under another combination of circumstances, he on one occasion adopted the same practice. The patient was the mother of a family, and had been above three days in labour, but the intelligent practitioners who attended her, viz. Dr. Barnes and Mr. Anderson of Carlisle, could not feel the os uteri, in consequence of an excrescence which nearly filled up the cavity of the pelvis. The author (who was recognised by those old pupils while accidentally passing through Carlisle) ascertained that it was a shoulder presentation, and on making an attempt to turn, having found, from the flaccid state of the navel string, that the infant was dead, he gently pushed back the shoulder, brought the head down on the brim of the pelvis, and left the gentlemen to lessen it in the usual manner.¹

As he does not believe that Mons. Flammant's hippocratic method will ever be adopted by British practitioners, he holds it to be unnecessary to make any further remarks on the subject.

But with respect to a practice lately adopted in London and Dublin, in the cases under consideration, he feels it to be his imperative duty to express his disapprobation. The practice to which he alludes, is exviscerating the fœtus, that is, extracting the contents of the thorax and abdomen.

Dr. Ramsbotham (vol. ii. page 56) thus describes the operation:—"Perforation of the chest offers the safest and most effectual mode of delivery, when the chest and ribs are situated in, or at the brim of the pelvis, immediately opposed to the examining finger; or when a considerable portion of these parts are pushed into, and are firmly impacted within the upper part of the cavity; the neck being out of reach. A large perforator, with a cutting edge on its outer surface, well guarded by the hand, must be introduced between the ribs, and an opening made sufficiently large to admit the introduction of the hand; through this opening the contents of the chest, and those of the abdomen must be gradually withdrawn, This unpleasant operation necessarily occupies a considerable space of time; it allows the trunk at length to bend upon itself, and to collapse into a smaller compass."

Dr. Collins says, in allusion to this practice,—“We have performed this operation repeatedly, without the slightest injury to the patient, except in one instance, where the pelvis measured but two and

¹ This poor woman recovered from delivery, but afterwards died from autumnal cholera, which at that time prevailed extensively and fatally in Carlisle.

a half inches from pubes to sacrum; nor do we think, where common caution is used, that there is, comparatively speaking, any risk to the patient. Delivery in this way is very troublesome; in most instances requiring an hour and a half, or two hours, for its completion. A free opening must be made, with the ordinary perforator, into the thorax, so as to permit us completely to empty it of its contents; we next open through the diaphragm, and remove the abdominal viscera, in order, as much as in our power, to diminish the bulk of the body; for this purpose, the crotchet and fingers are to be used; we then fasten the crotchet on the pelvis of the child, and giving gentle assistance with each pain, where the woman is well formed, the breech, by a little perseverance, will be got down and the delivery accomplished. Where we find resistance, and there is no very urgent symptom rendering speedy delivery necessary, by withholding further interference for some hours, the body becomes softened and collapsed, and is then more easily removed; in some instances the child is expelled doubled by the action of the womb."

The account which Dr. Ramsbotham gives of the cases (vol. ii. page 76, *et seq.*), where he had recourse to this practice, confirms Dr. Collins's statement of the difficulty of the operation, and of the length of time required to perform it.

That the cases, where Dr. Ramsbotham and Dr. Collins had recourse to this practice, are too few to establish the safety of this method must be obvious to every medical man, and the author can truly state, that in the course of his practice (now extending to nearly half a century) he has met with only one case of preternatural labour of the second order, where, from the previous mismanagement of the patient, and from her being apparently in a dying state, he feared that he could not accomplish the operation of turning, and yet he eventually succeeded.¹

His decided impression is, that, generally speaking, the circumstances which have rendered the operation of turning (after the rupture of the membranes) difficult, and apparently impracticable, are to be attributed to mismanagement. If a large opiate be not exhibited previous to attempting the operation, the uterine contractions in some cases cannot be overcome by ordinary and safe exertions. It may be unnecessary to advert to the timidity or embarrassment of the practitioner. He repeats that, although he has been

¹ This case is recorded, page 104 of *Select Cases in Midwifery*, published in 1795. This patient, the mother of eleven children, had been five days and nights in labour before the author was called in. On examination, the right arm and the umbilical cord of the infant, which had evidently been dead for some time, were found in the passage; and although the poor woman was greatly exhausted, the uterus was so strongly contracted, that it appeared impracticable to pass, with safety, the hand beyond the shoulder.

In consequence of an unsuccessful attempt to open the thorax, three of the cervical vertebræ were separated and extracted; by which means the head of the infant was made to recede, the feet were brought down, and the infant was extracted without actual decapitation. The poor woman did not survive thirty hours.

called in to many cases in which an unsuccessful attempt had been made to deliver, he has never yet, since the case that occurred in August 1794, already referred to, had any difficulty in bringing down the feet of the infant, a fact quite notorious in this city. He believes that exviscerating the infant can very seldom, if ever, be necessary.

ON UTERINE HEMORRHAGE OCCURRING DURING THE TWO LATTER MONTHS OF PREGNANCY.

Of the untoward accidents to which pregnant women are occasionally liable, one of the most alarming certainly is, a discharge of blood from the womb after the completion of seven calendar months; and although several eminent practitioners, both foreign and domestic, have discussed at full length the management of such cases, it appears to the author that the appropriate means of relief have not yet been satisfactorily explained.

Discharges of blood from the womb during the two latter months may occur previous to the commencement of labour, or during its progress, or even after its completion. It is necessary, therefore, to consider this untoward symptom under those different circumstances.

SECTION I.—DISCHARGES BEFORE THE COMMENCEMENT OF LABOUR.

Slight discharges, called by the nurses shows, may happen at any time after the completion of the seventh month, and may be readily arrested by quiet, and the other ordinary precautions which women adopt in such cases. But occasionally, there is a sudden profuse discharge of fluid blood, or of large coagula, producing certain injurious influences upon the general system, without any tendency to uterine contraction.

The effects of the loss of blood in the latter months, and previous to the occurrence of labour, have not been so minutely detailed by systematic writers, as to render them familiar to young practitioners, but in the cases recorded by Dr. Smellie, by Mr. Perfect, and by Dr. Ramsbotham, reference to which is made in the foot note,¹ there is a most graphic description of the progressive symptoms of this most alarming occurrence.

For many years after the author began practice, he witnessed, in the cases which ended fatally, the following symptoms, in various

¹ Smellie, vol. iii. page 110, 118, 128, 138 and 297.

Perfect, vol. i. page 139 and 235, and vol. ii. page 354.

Ramsbotham, vol. ii. page 197, 200, 202, 206, 210, 213, 216, 220 and 225.

combinations, viz. pallidness of the countenance—languor and faintness—sickness and slight retching—feebleness of the pulse—singing of the ears—sensation of swimming of the head, with impaired vision—oppression at the precordia—coldness of the limbs—cold clammy exudation on the surface—the pulse imperceptible at the wrists—low muttering delirium—excessive restlessness, with gasping for breath and convulsions, or moaning, with very imperfect or laboured breathing. He believes, that for the first twenty years he did not see any patient die from hemorrhage, in whom delirium, or convulsions, or laborious breathing, with distressed groaning, did not precede the fatal event.

But he has now met with many exceptions to what he still considers the general rule. It has been his misfortune to witness several cases where the individuals swallowed, spoke with a firm tone of voice, and had a perceptible pulse at the wrists, within two minutes previous to death, having neither had delirium, nor oppressed breathing, nor convulsions.

Uterine hemorrhage, during the latter two months of pregnancy, must be occasioned either by the rupture of some of the blood-vessels running into the decidua, or by a separation of a portion of the placenta from the surface of the uterus. Slight discharges proceed from the former cause, and the more serious ones from the latter.

It cannot be doubted, that in particular states of the system, passions of the mind—mechanical injuries—bodily fatigue, and local irritation from certain indulgences, may occasion a rupture of the vessels transmitted to the decidua in the vicinity of the os uteri, and thus produce those temporary slight discharges of blood which are occasionally met with.

When, however, the discharge is profuse, it is now well understood that it is occasioned by the separation of a portion of the placenta. While this fact is admitted by the profession at large, it may, perhaps, seem wonderful, that the effect of this separation is not yet properly understood, at least, as far as published authorities evince, the common belief being that the blood, discharged in consequence of the separation alluded to, issues from the uterine vessels which had been thereby ruptured.

As it appears to the author that the practice, in those very interesting cases, is to be founded upon the knowledge of the true source of the discharge, he feels it incumbent upon him, although he is most reluctant to dissent from respectable authorities, to advert particularly to the opinion so universally and, to him, so inexplicably prevalent upon this subject.

Dr. Ramsbotham says (page 172), "When the placenta is implanted over, or is attached very near to, the mouth of the womb, an attack of flooding must take place upon the commencement of the relaxant process in the cervix uteri, preparatory to labour. That occurrence is a necessary consequence of some separation of the placenta from its original attachment. In explanation of this positive assertion, I must beg to remark, that for six or seven

months after conception, the uterine structure has been more particularly developed in its fundus and body; and that about that period the cervix uteri becomes shorter and thinner. While these changes are going on, the placental attachment is so much disturbed, that some of the uterine vessels passing into the placental cells are separated; the immediate consequence of which is a discharge of blood in greater or less quantity, according to the degree of detachment."

"The nearer the completion of the ninth month an attack of flooding takes place, the more rapid and dangerous does it usually prove; for, at that time, the uterine vessels, passing into the placental cells, have acquired their greatest degree of magnitude; by any separation of the attachment, therefore, their contents are discharged with increased velocity."

And again, (in page 115,) he has the following observations:—

"A natural cessation of the hemorrhage is probably brought about, partly by a degree of uterine contraction silently exerted, and partly by the formation of a plug at the extremities of the bleeding vessels. I cannot suppose it possible, that the separated portion of the placenta can be again attached to the uterus with such a degree of precision as to be restored to the performance of its original functions. That portion may, perhaps, become adherent to the surface whence it was detached by an effusion of lymph; but its cells must, for the future, remain impermeable to the mother's blood, the fœtus will therefore be deprived of some placental influence, and occasionally to that extent as to terminate its existence." In several other passages of Dr. Ramsbotham's work, the same opinion is repeated.—(*Vide* p. 112, p. 121.)

On this subject, the following expressions of Professor Davis lead the author to believe that he agrees with Dr. Ramsbotham that the hemorrhage proceeds from the vessels of the uterus, which had been burst by the separation of the placenta.—(Page 1052.)

"When the discharge has been rapid and sudden, as well as profuse, in the first instance, he has concluded, as he thinks reasonably, that it must have had an extensive separation of the uterus from the placenta for its source. It is obvious, that the same extent of now become unprotected uterine surface might furnish a source, at any future period of the pregnancy, of a hemorrhage at least of equal magnitude, which the patient might not certainly survive. This fact, then, furnishes a principle which perhaps, in most cases, should be allowed to direct our practice. The same source continuing to be exposed, it should be a matter of anxious enquiry, how far it were probable that a patient, already enfeebled by a first flooding, might be able to bear with impunity, and certainly survive, a hemorrhage of the same amount again."

Dr. Dewees, in his sixth edition, dated 1833, certainly has adopted the same opinion; for he says, in reference to the distinction between unavoidable and accidental hemorrhage, (page 381), "From the proximity of the blood vessels to the os externum, the blood will issue from them so quickly as to appear both more fluid

and more florid than in the accidental species; for, in the accidental, the blood may escape remotely from the os uteri, and be obliged to travel slowly through the meshes of the connecting medium of the ovum and uterus, and hence will appear less florid and fluid, and be more disposed to coagulate than in the unavoidable."

Again, he says (page 384), in further elucidation of his views, in allusion to the use of the plug (a practice to be specially noticed by and by), "But the most important use of the tampon, under those circumstances, remains to be mentioned, which is, that it causes the coagulation of the blood, merely by presenting a surface favourable to this change, long before this disposition would spontaneously show itself."

Mr. Ingleby says (page 134), "The effusion proceeds from the large vessels in connection with the placenta, on the one hand, and the vessels in connection with the decidua and membranes on the other."

Many other authorities might be quoted to prove the common opinion upon this subject, and yet the author, from the earliest period of his professional life, has been anxious to show that the hemorrhage in those cases proceeds more from the separated portion of the placenta than from the ruptured uterine vessels, and he considers that on this subject there can be no doubt in any reflecting mind.

As there is a free communication throughout the whole cellular texture of the placenta, the blood conveyed by the uterine arteries into any part of it is necessarily diffused over the whole mass, and hence, if any part be detached, blood must be discharged from the separated portion.¹

Although the anatomical structure of the placenta renders this proposition a fair inference, it is most satisfactory that practical observations establish it beyond the possibility of controversy.

Thus, Dr. Denman has remarked (vol. ii. page 297):—"This hemorrhage is often, but not always, in proportion to the space of the placenta attached over the os uteri, or to the quantity separated, for women have sometimes been in as great danger when the mere edge of the placenta was fixed upon the os uteri, as if the middle had been placed over it." Dr. Collins bears testimony to the same fact. He says (page 91), "I have seen the hemorrhage as profuse when there was merely a portion of its edge detached, as where the great bulk was separated."

Secondly. Dr. Smellie has related the history of three cases where the placenta was extracted before the infant, and where the hemorrhage, which had occurred at the commencement of labour, had ceased the moment the placenta was taken off. Dr. Ramsbotham has referred to six cases of the same kind, and Dr. Collins

¹ This structure of the placenta has been called in question by Dr. Lee, in a late publication, sanctioned by the high authority of the Royal Society of London; but the observations of Dr. Ley of London, and of Dr. Burns of Glasgow, have triumphantly established the accuracy of the Hunterian explanation of the structure of that part of the ovum.

(page 102) has mentioned two similar cases. In one of these, the separation of the placenta had taken place on the evening before the patient was admitted into the Dublin Lying-in Hospital, and in the other the placenta was found in the vagina, on her admission into that hospital. In both cases, Dr. Collins expressly mentions, that hemorrhage had preceded the separation of the placenta, and had ceased on that event taking place. The author has seen two cases of the same nature.

It is obvious, that if uterine hemorrhage, before delivery, were occasioned only, or chiefly, by the rupture of the uterine arteries which had run into the placenta, the patients, under the circumstances above narrated, must have rapidly sunk. Indeed, the only possible explanation of the hemorrhage having ceased in those cases, after the total separation of the placenta is, that the uterine vessels, ruptured in consequence, had been retracted within the substance of that organ. But, at any rate, it cannot be controverted, that the cessation of the hemorrhage, after the complete separation of the placenta, while the rest of the ovum still distended the uterus, affords the strongest possible evidence that the flow of blood, which it is well known continues while there is only a partial separation, proceeds from the detached portion of the after birth, as well as from the uterine vessels.

Thirdly. In several cases which have fallen under his observation, where the author was called too late to afford proper assistance, it was found that the fatal hemorrhage had proceeded from the separation of a very small portion of the placenta. In one distressing case, a few years ago, where his friend Mr. Barker and himself witnessed the appearances in a woman, who had died undelivered from hemorrhage between the seventh and eighth month, it was found that the area of the separated portion of the placenta was less than a square inch.

This error, in respect to the source of the hemorrhage, has led to a still more extraordinary and more important one, in relation to the means by which the natural resources of the constitution stop the progress of such discharges.

According to all the latest authorities, it appears that the general belief of the profession is, that hemorrhage, occurring before the birth of the infant, may be checked, by diminished action of the heart and arteries favouring coagulation in the extremities of the ruptured vessels. Dr. Ramsbotham expressly says (p. 115),—"A natural cessation of the hemorrhage is probably brought about partly by a degree of uterine contraction, silently exerted, and partly by the formation of a plug at the extremities of the bleeding vessels."

Dr. Dewees in his arguments for blood-letting in those cases, has the following remarks, (page 383,) "That at this period, the hemorrhage is, for the most part, owing to a mechanical separation of a portion of the placenta, but which will not generally be renewed for some time, as the separated vessels and the other connecting media possess considerable elasticity; therefore time will be

given for the formation of coagula, provided the proper means be pursued to favour their production."

Mr. Ingleby says (page 69), "The other means of restraining hemorrhage, namely the formation of coagula and slight contraction of the vessels, are subordinate to muscular contraction. The coagula sometimes extend a considerable distance within the tubes."

By what prejudice this notion has been so generally adopted the author cannot understand. No anatomist has yet ventured to allege that he has seen coagula plugging up the extremities of the ruptured vessels in the gravid uterus. In point of fact, their structure renders it impossible. The author has in his collection, three preparations of the uterus taken from subjects where hemorrhage had proved fatal, at periods after delivery varying from a few hours to three weeks, and where the hemorrhage had ceased for some time before death, but there was not the slightest appearance of coagula in the extremities of the vessels.

That hemorrhage, in the latter months of pregnancy, whether accidental or unavoidable, is occasionally suspended by the natural powers of the constitution, is indisputable; but neither the phenomena during life, nor the appearances after death, show that this is accomplished by the coagulation of the blood in the extremities of the ruptured vessels.

When a portion of the placenta in the latter months of pregnancy is separated, either accidentally or unavoidably, if the hemorrhage cease, it will be found that the uterine vessels thus ruptured are drawn into the substance of that organ, and constricted, to which their peculiar structure admirably adapts them,¹ and that the separated portion of the placenta undergoes a change analogous to that of adhesive inflammation, probably from the influence of the atmospherical air. The recurrence of the hemorrhage, in such cases, arises from a further separation.

Generally, when any portion of the placenta is separated during the latter months of pregnancy, the consequent discharge of blood is manifest; but sometimes it is retained and accumulated within the uterus, and is necessarily productive of danger, either to the mother or to the infant. Happily, such cases occur rarely, and hence the author has seen only a few of these: the two following were the most remarkable.

¹ "The arteries of the uterus which are not immediately employed in conveying nourishment to it, go on towards the placenta, and proceeding obliquely between it and the uterus, pass through the decidua without ramifying; just before they enter the placenta, making two or three close spiral turns upon themselves, they open at once into its spongy substance without any diminution of size, and without passing beyond the surface, as above described. The intention of these spiral turns would appear to be that of diminishing the force of the circulation as it approaches the spongy substance of the placenta, and is a structure which must lessen the quick motion of the blood in a part where a quick motion of fluid is not wanted. The size of these curling arteries at this termination is about that of a crow's quill." *Observations on Certain Parts of the Animal Economy*, by John Hunter, (published in 1796,) page 134.

A lady, the mother of a family, when past the eighth month of pregnancy, made, in consequence of a sudden fright, a violent effort to escape out of a field in which she was walking. Within less than a fortnight premature labour came on, and she was delivered of a still-born infant, whose cuticle was peeling off. In the central part of the lobulated surface of the placenta, a strong coagulum of blood, the size of an afternoon tea cup, (which had completely compressed the part of the placenta with which it was in contact,) was discovered. The adhesion of the edges of the placenta had saved the patient.

In the other case, the lady had very nearly approached the full period of her sixth pregnancy, when, about seven o'clock of the morning, she became affected with violent retchings, which continued for some hours, and were eventually followed by feelings of sinking. The author did not see her till two o'clock of the afternoon, and he then found her scarcely capable of articulating, and labouring under great difficulty of breathing. She was just able to tell him that she felt as if she were going to burst. She had a pallid countenance, a cold clammy exudation upon the surface, pulse at the wrists imperceptible, and a prodigious distension of the abdomen. There was no discharge from the uterus, and no symptom of labour. Immediate delivery was accomplished by passing the hand into the uterus, and a dead infant was extracted, which was followed by the discharge of an immense quantity of coagulated blood, and the placenta. The patient almost instantly expired.

Mons. Baudelocque has alleged (paragraph 1091) that uterine hemorrhage, during the latter months of pregnancy, may be occasioned in some cases by the rupture of the vessels of the navel string of the infant, and he has mentioned the particulars of one case, where he declares that he showed the ordinary medical attendant of the family, that the umbilical vein of the infant had been ruptured at its root. He adds, that the quantity of blood discharged could have filled two ordinary sized hats, and that the patient sunk after a protracted illness of forty days.

Admitting the fact of the rupture of the umbilical vein and of the hemorrhage, it must be quite obvious to any one who understands the anatomical structure of the gravid uterus, that there must have been some important circumstance in that case which Mons. Baudelocque had overlooked. For, in the *first* place, no more blood could issue from the rupture of that vessel than what had circulated through the vascular system of the fœtus, and that could not possibly have filled one hat. *Secondly*. Not a drop of the mother's blood could be discharged from the umbilical vein of the fœtus; and, *thirdly*, Mons. Baudelocque himself states, that the infant was not only born alive, but survived. As the infant in that case was expelled by the lower extremities, it is evident that the rupture of the cord had occurred in the progress of delivery, and must have happened very shortly before the birth of the child, and that no considerable loss of blood from the navel string could have taken place, because the infant was born alive.

The separation of any portion of the placenta, previous to the occurrence of labour, may be the effect of accident, or it may be the necessary consequence of its adhering to a part of the cervix uteri. This latter cause was discovered about the middle of last century. It was particularly noticed in the year 1752 by Dr. Smellie, who at that time practised and taught midwifery in London with great success. It was afterwards described by Mons. Levret, of Paris, in 1756. But it does not seem to have attracted the attention of British practitioners till the publication of Dr. Rigby of Norwich, in 1776, who availed himself of the discoveries both of Dr. Smellie and of Mons. Levret, while he contrived to make the profession believe that his doctrines were original.

Dr. Rigby's distinction of those cases (*viz.* into accidental and unavoidable), borrowed without acknowledgment from Levret (page 343), is perfectly correct, but his inferences have led to very serious errors in practice. His professed belief was that by ascertaining the cause of the hemorrhage, the probable event could be certainly predicted, and the appropriate treatment as certainly decided upon. Had that opinion been true, the practice in those distressing cases must have been greatly simplified, but every member of the profession can bear witness to its inaccuracy.

While it is conceded that the attachment of any portion of the placenta to the cervix uteri is necessarily and unavoidably the cause of great danger, the author can most solemnly assert, not only that accidental separation of the placenta is frequently productive of as much danger, but also that it is apt, under the charge of inexperienced practitioners, to be most improperly treated. He has seen, in the course of his professional life, fully as many cases of fatal event from accidental separation of the placenta, as from attachment over the cervix uteri; and this is easily explained. The practitioner's fears are roused in the latter cases, and he is upon the alert to give the necessary assistance. But in the former cases the symptoms proceed insidiously,—time passes without the occurrence of any symptoms which lead the attendants or the patient to understand the necessity for immediate interference, and the practitioner yields to their feelings, in the momentary expectation of the hemorrhage ceasing, or of uterine action coming on. At last a sudden gush sinks the living powers.

Although, therefore, his impression is, that where an intelligent practitioner has the charge of the patient from the first threatening of hemorrhage, he may be enabled to judge, from the progress of symptoms, of the probable danger, it is very different where the discharge has been proceeding for some time before his assistance is required. Under such circumstances, he is not to be deceived by any temporary appearances of the patient having rallied, but to consider deliberately whether there have been such a flooding as may have injured the living powers.

He is to be directed in deciding upon this point, by a careful consideration of the age and health of the individual,—of the quantity of blood lost, and of the present symptoms.

With respect to the age and health, young women, particularly those in the better ranks, suffer less than those who have had a family, and than those in the lower ranks. It is unnecessary to remark, that where the woman has been previously in a state of debility, a very trifling loss of blood may prove rapidly fatal. In persons of this description, therefore, it is of great consequence to ascertain the quantity of blood lost, for if it exceed from twenty to thirty ounces by weight, active measures are required.

As to the symptoms, the good general rule is, that where there is pallidness of the face, feebleness of the pulse, and coldness of the limbs, the patient should be considered in great jeopardy.

In proceeding to explain the treatment of cases of uterine hemorrhage during the two latter months of pregnancy, the author must premise his dissent from the generally received doctrine, that accidental and unavoidable hemorrhage require a different mode of practice, a doctrine which he considers to have been productive of much injury.

He concurs, indeed, in the propriety of examining carefully in every case of hemorrhage (in the two latter months of pregnancy) the state of the uterus, to ascertain whether any portion of the placenta be attached over the cervix uteri. For this purpose, he has always practised and recommended, that if the exact state of the uterine contents cannot be ascertained by the ordinary mode of examination, viz. the introduction of one or two fingers, the hand should be passed into the vagina, in order that the practitioner may be enabled to insinuate a finger into the orifice of the uterus, so as to describe its circumference to the height of an inch.

Should any pulpy or stringy substance be felt by this examination, the inference is, that the hemorrhage proceeds from a portion of the placenta being separated in consequence of its attachment, but if no pulpy or corded substance be discovered, the hemorrhage must arise from an accidental separation.

Where the placenta is implanted on the cervix uteri, the first duty of the practitioner is, to decide whether palliative means are justifiable, or whether immediate delivery be necessary. This important practical point must be determined by a careful consideration of the circumstances of the case.

If the patient have scarcely exceeded the seventh month of pregnancy, and if the discharge have abated on the arrival of the practitioner, and have not sunk the living powers, every endeavour should be made to enable the patient to go on for a week or two, not only as affording a better chance of preserving the life of the infant, but as lessening the difficulty and danger of artificial delivery, by favouring the development of the uterine texture.

With this view, every means which can contribute towards moderating the action of the heart and arteries, such as horizontal posture, perfect quiescence, and low diet, ought to be recommended. Under particular circumstances, it may be necessary to advise the internal use of some of the neutral salts, such as a solution of the nitrate of potass, or of the sulphate of alumine, that is, there are

many individuals who, unless internal medicines are prescribed, disregard the rules for the management of the non-naturals. The internal use of neutral salts may contribute to lessen the action of the heart and arteries, but their influence in that respect must be very inconsiderable in checking hemorrhage, where there is an actual separation of a part of the placenta.

Particular directions must be given in those cases to summon the practitioner whenever there is any threatening return of the hemorrhage, and, in the meanwhile, that at least an English pint of some metallic styptic solution be carefully injected per vaginam, by means of a common bag and pipe,¹ and that immediately after a dram of tinctura opii, mixed with an ounce or two of gruel or thin starch, be administered as an enema.

By this practice the author has often succeeded in palliating symptoms for from two to three weeks, and, paradoxical as it may appear, he has sometimes found that the patients went on to the full time, and had a natural delivery without hemorrhage. He must admit, however, that in the few cases of this kind which he has met with, the event was very different from what he had anticipated.

This unlooked for termination of cases, which he had watched with much anxiety, was eventually explained. In those cases there had been a small lobule of the placenta adhering to the membranes, and at the distance of three or four inches from the general mass, and this had been attached to the cervix uteri. The astringent lotions thrown up the vagina had altered the texture of this lobule, and prevented its receiving or discharging blood. In mentioning this fact in his lectures, the author has sometimes described the size of such detached lobules as being that of a very small dog's ear.

Such detached lobules are connected with the general mass of the placenta by a few bloodvessels, which are evidently fœtal. When, therefore, the lobule in question ceases to receive blood from the uterus, either by a change of texture, excited by the topical styptics, or by a total separation from the surface of the uterus, the fœtal blood can no longer circulate through it.² This, by the by, affords an additional evidence, that the hemorrhage does not proceed chiefly, and far less entirely, from the ruptured uterine vessels in cases of partial separation of the placenta.

Formerly, blood-letting and the internal use of styptic medicines

¹ The author generally prescribes a solution of the sulphate of zinc, or of the sulphate of alumine, in the proportion of a dram to an English pint.

² The author regrets that it has not been in his power to preserve any specimens of this curious deviation in the structure of the human secundines, for they have all occurred in the course of his private practice, and no consideration has ever induced him to shock the prejudices which prevail upon this point. It is only in hospital practice that any liberty can be taken with the secundines. In the posthumous description of the gravid uterus of Dr. Hunter, it is stated, page 37, that "there is sometimes a small lobe or two (of the placenta) separated from the rest."

were prescribed in such cases, a practice still recommended by Dr. Dewees, professor of midwifery in the University of Philadelphia.¹ He says,—

“For this purpose, we should bleed under the restrictions just mentioned,” (viz. when the pulse is active), “we should exhibit the sugar of lead with laudanum, as frequently as the exigencies of the case may require. Should these means moderate the discharge, and the blood be found disposed to coagulate,” &c. From these and other expressions of Dr. Dewees, it is evident that he believes that the hemorrhage, from the separation of the placenta in the latter months of pregnancy, may be arrested by the coagulation of blood in the extremities of the ruptured uterine vessels, and that the drawing blood from a vein, and the exhibition of the acetate of lead and of laudanum, tend to promote such coagulation, or the contraction of the ruptured vessels to which he specially alludes.

The author has been accustomed (in lecturing) to urge a strong illustration of the inefficiency of this practice. He asks, whether, if any of the audience should wound his finger in mending a pen, he would direct a vein to be opened, and then swallow a dose of sulphuric acid, or of the acetate of lead, or whether he would bind up his wounded finger?

Hemorrhage, arising from the separation of the placenta, is to be considered exactly as that from a wound. By moderating the action of the heart and arteries, the rapidity of the discharge may be lessened; but that is all that can be expected, and certainly no army surgeon would think of drawing blood by the lancet in a case of hemorrhage from the cut of a sabre, and far less would he trust to the internal use of astringents under such circumstances.

Another proposed method of stopping the discharge for the time, is rupturing the membranes and plugging the vagina, a practice strongly advocated by Professor Davis. He says (page 1041), after relating an unfortunate case where the efforts in dilating the os uteri had occasioned contusion and inflammation, which proved fatal: “Since the date of the above case, the author has never been induced to make the attempt to force his way into the uterus, when its orifice has been in a state of obstinate rigidity, or even in the absence of a considerable amount of development and relaxation.”

“But suppose the hemorrhage should return, either once or repeatedly, the orifice of the uterus continuing in a rigid state, so as to involve the patient's life in great jeopardy; what other measure, or is there any other that can be proposed, by which her life might be placed in a state of security? The treatment in such a case, which the author for many years has recommended and practised with great advantage, is that which was long ago suggested to the profession by Mr. Puzos, under similar circumstances, viz. that of discharging the liquor amnii by rupturing the membranes.

“It is a fact that the artificial discharge of the liquor amnii may, in a certain proportion of cases, be relied upon as a means of

¹ Sixth edition, page 383.

suspending profuse uterine hemorrhages; and it will hereafter be made to appear, as it has indeed already been seen, that the discharge of the liquor amnii thus promoted may be depended upon as a means calculated to induce the action of parturition."

Professor Davis has erred in supposing that Puzos recommended the rupture of the membranes, where the placenta is attached to the neck or orifice of the uterus. Puzos expressly says (page 334), that puncturing the membranes can only be useful in the cases which he had described in page 327, viz. "*Le décollement de quelque portion du placenta d'avec le fond de la matrice.*"

Even if Puzos had recommended rupturing the membranes in cases where the placenta is over the cervix or os uteri, his error must have been considered venial, because he was not acquainted with the true anatomical structure of the gravid uterus. His treatise was published in 1759 (after his death), but Dr. Hunter's splendid work, illustrating the economy of the gravid uterus, was not published till 1775.

That in cases of accidental separation of the placenta, previous to the occurrence of labour, the discharge of the liquor amnii has not unfrequently arrested the hemorrhage, is admitted, but there are certain circumstances, to be noticed by and by, which render the success of the practice doubtful. It is very different in the case of attachment of the placenta over the os uteri. In that case it is more than probable that the rupture of the membranes would add greatly to the difficulty and the danger of the operation of turning, an operation which Professor Davis himself allows to be eventually necessary.

As to plugging the vagina with the view to arrest hemorrhage in the latter months of pregnancy, whether it be unavoidable or accidental, the author has no difficulty in declaring it to be most hazardous. Dr. Stewart, who so strongly recommends this practice in cases of accidental hemorrhage, says,¹ that "where the placenta is over the os uteri, it is not a remedy which could be employed with safety or advantage." And yet Dr. Stewart has not stated the true reason for the objection, which is, that the blood in such a case would accumulate within the uterus.

Dr. Dewees, in strong language, also advises the practice of plugging the vagina, and he adduces two reasons for it. *First*, That the sponge introduced to stuff the vagina favours the coagulation of blood, by which he supposes that the hemorrhage is naturally arrested; and, *secondly*, that the mechanical pressure promotes the dilatation of the os uteri. And he declares that the result of his experience has established to his conviction the utility of the practice. (page 390, *et seq.*)

The author feels compelled to say, that he cannot admit the accuracy of this reasoning, and he should ascribe the success which

¹ Treatise on Uterine Hemorrhage, by Duncan Stewart, M. D., London 1816, page 49.

has crowned Dr. Dewees's endeavours to some fortunate coincidence rather than to the mode of treatment.

Coagulation of the blood cannot stop hemorrhage arising from the separation of the placenta, because, as already mentioned, the discharge proceeds from the separated portion of the placenta in a greater degree than from the ruptured vessels, a circumstance evidently unknown to Dr. Dewees; and consequently the blood received into the adherent mass of the placenta must continue to flow from the detached part till the change alluded to (page 73) takes place.

With respect to the allegation, that plugging the vagina could dilate the os, or rather the cervix uteri, at a period of pregnancy previous to that (by several weeks) at which its usual development is effected, it seems quite inconsistent with the laws of nature. But the important objection to the practice is, that from the condition of the uterus after the seventh month of pregnancy, the blood discharged by the separation of the placenta, if prevented from passing per vaginam, may accumulate within the cavity of the uterus, and prove fatal, of which a remarkable case, witnessed by the author in September 1816, has been already recorded, (page 74).

In those distressing cases, then, where the placenta is implanted over the os uteri, artificial delivery must be had recourse to whenever the discharge is such as to threaten injury, either immediate or eventual, to the constitution of the patient. The object of this practice is to empty the uterus, and to promote its contraction; in other words, to imitate the means which nature has provided for the prevention of hemorrhage after delivery, viz. the contraction of the womb, by which the bleeding extremities of the vessels are drawn into its substance, while the trunks of those vessels are at the same time strongly compressed, as already explained, (page 1 of this volume.)

Generally speaking, when this necessity occurs, the os uteri will be found sufficiently yielding, notwithstanding its appearing to be little dilated. Although the author had attended many cases of placental presentation, from the year 1786, he met with no difficulty from the resistance of the os uteri till September 1816, and in that month he was called to two cases, where the patients seemed to be in articulo, from the deluge of the discharge, and nevertheless where the os uteri was in the state of obstinate rigidity which Dr. Davis has described (page 1042), and for the treatment of which he has so strongly recommended plugging the vagina.

Under those circumstances, the author neither ruptured the membranes, nor plugged the vagina, but had recourse to a method which he believes has not hitherto been suggested by any of the profession. He had upon many occasions, where it became necessary to turn the infant while the ovum remained entire, saved the patients the pain arising from forcing the hand into the uterus, by merely, after passing it into the vagina, pushing back the presenting part with two fingers, in such a direction as literally to turn

the fœtus round. He was thus enabled to hook down a foot, on withdrawing which, and securing it first with a riband, and then with a soft cloth, he had found that, by supporting the os uteri with two fingers of the right hand, and drawing forward the infant with the left, the uterus opened both rapidly and safely. 'This practice he adopted in the cases alluded to, and saved both patients.' The facility with which this operation can be performed cannot be credited by those who have neither tried nor witnessed it.

Suitable compression of the abdomen, by means of a binder, ought, if possible, to be applied in all such cases, previous to performing the operation of turning.

As soon as the fœtus and secundines are withdrawn, every means for promoting and securing the complete contraction of the uterus must be carefully pursued. The great hazard is, that the cervix uteri may continue relaxed, while the fundus readily contracts. Under such circumstances, the practitioner is very apt to be thrown off his guard, for he feels, as he supposes, very distinctly the contracted uterus through the parietes of the abdomen, and some time may elapse before there be any discharge from the ruptured vessels of the cervix. Even two hours may pass without alarm, and this probably happened in the case of the Princess Charlotte. It will be found in those cases, that all vestige of the os uteri is obliterated, the vagina and uterus forming one continuous canal.

The knowledge of this fact has taught the author, for many years past, to dread this danger in every case where he has been obliged to force delivery in consequence of uterine hemorrhage. He guards against it, by introducing his right hand (immediately after all the uterine contents are expelled), and by applying his left hand to the surface of the abdomen, he compresses strongly the uterus between the two hands. In a short time, he finds the cervix uteri begin to contract, and he does not withdraw his right hand till he has literally, by pressure, brought the parietes of the cervix and os uteri into contact.

This mode of practice the author has pursued for above twenty years, and he has never met with a single instance where it proved hurtful. It has, indeed, been strongly objected to by Dr. Lee;² but while his old pupil has advanced no other reasons for his objections than hypothetical assertions, the author could, if necessary, bring forward many living witnesses in proof of its safety and utility.

In those alarming cases, it is a good precautionary measure to direct an opiate enema to be administered, and it seems unnecessary to add, that every conscientious practitioner must deem it his duty to remain by the patient for several hours.

As to cases of accidental hemorrhage previous to the commencement of labour, the patient must be very carefully watched, and if

¹ Dr. Moir followed this practice with complete success, on the 1st January 1836. *Vide* First Part of these Observations, Appendix.

² *Cyclopædia of Practical Medicine*, vol. ii. p. 264.

the ordinary palliative means prove unsuccessful, the same practice must be pursued as in the former case. But there are certain means of palliation recommended in such cases by most respectable authority, viz., the use of the plug and rupturing the membrane, of which the author must express his decided disapprobation.

Leroux, many years ago, recommended plugging the vagina in cases of uterine hemorrhage; and there can be no doubt that, previous to the completion of the third month of pregnancy, it is a most effectual method of checking the discharge. The condition, however, of the uterus, in the latter months, is very different from what it is in the early months, for its parietes are dilatable, and consequently, as already stated (page 73), if the flow of blood through the vagina be mechanically obstructed, the discharge may be accumulated within the uterus—that is, between the surface of the uterus and that of the membranes.

It is in this way only that a case recorded by Dr. Merriman in his Synopsis (page 264) can be accounted for. A medical practitioner of respectability plugged the vagina, and having, as he supposed, left the patient in a state of safety, mounted his horse to pay a few urgent visits. On his return, he was greatly horrified at finding the patient dead. She had sunk rapidly after he had left her. In short, the objections urged against the use of the plug in placental presentations, apply still more strongly to cases of accidental hemorrhage.

Rupturing the membranes is a practice which has lately been strongly recommended by several most respectable practitioners. It is alluded to and sanctioned by Dr. Denman (vol. ii. p. 310.) It is recommended by Dr. Merriman in his Synopsis, and his recommendation is founded upon the successful result of thirty consecutive cases, without a single failure. No wonder, then, that it has been adopted by practitioners who are anxious to save as much as possible the feelings of their patients, or who are averse to incur the responsibility of active interference.

The professed object of rupturing the membranes in those cases, is to excite the action of the uterus; in Dr. Davis's words, "with a view to the gradual induction of the action of labour" (page 1053). But every practitioner of experience well knows, that, even at the full period of utero-gestation, many hours are apt to intervene between the rupture of the membranes and the occurrence of labour pains. If, therefore, a draining of blood continue, there is great hazard of the patient sinking. It must be quite obvious to any person who reasons upon the subject, that when accidental hemorrhage is diminished or suppressed by the discharge of the liquor amnii, it must be in consequence of the part from which the blood issues being brought into close contact with the surface of the infant's person. But no one can, *a priori*, calculate whether the bleeding part is to be so applied. Dr. Hunter invariably found, that where the placenta was attached to one side of the uterus, the limbs of the infant had been placed opposite to it. If, therefore, any portion of the placenta, so situated, be detached, the bleeding

part, on the discharge of the liquor amnii, must necessarily be opposite to some of the voids left by the ordinary position of the infant, and the hemorrhage would, of course, go on.

Upon this principle, the author has always urged two objections against this practice: *firstly*, that the discharge of the liquor amnii may fail to check the hemorrhage; and, *secondly*, that it must increase both the difficulty and the danger of turning, should the urgency of the case eventually require that expedient. The result of Dr. Ramsbotham's practice has suggested a third objection, viz., that the time lost in waiting for the effect of the rupture of the membranes may exhaust the living powers.

On a careful, and, he trusts, candid review of Dr. Ramsbotham's very interesting details, he feels warranted in asserting that his first and third objections have been verified by those cases, in a degree which he could scarcely have believed. Indeed, he has stated (in lecturing), that if he had fabricated cases for the purpose of showing the danger of this practice, he could not have had the ingenuity to contrive the circumstances so graphically detailed by Dr. Ramsbotham. Thus, in seven out of sixteen cases where this practice was had recourse to, the event proved fatal, and in all those seven cases, the author cannot resist the impression, that if turning had been accomplished at the time the membranes were ruptured, the event would have been very different.

During the last thirty years the author has only met with two cases where he adopted this practice, and on both occasions he resorted to it with very great reluctance. In the first case, the patient had been flooding for at least seven hours before he was called in. She supposed that she had felt the expiring struggles of the infant on the preceding evening, having already had the misfortune of bearing three or four dead children. When he visited her, she had no symptom of labour, and was in a state of great exhaustion. On his attempting to pass the hand through the os uteri, such fainting was induced as threatened immediate dissolution, and it therefore became necessary to rupture the membranes. The hemorrhage ceased, opiates and cordials were given, and the abdomen was firmly compressed. Her strength rallied, and uterine contractions came on at the distance of six or seven hours, and a dead infant was expelled, instantly followed by the placenta.

In the other case, the patient, though the mother of a large family, had always suffered much, during the first stage of labour, from the rigidity of the os uteri, insomuch, that till the author attended her, (which was not till she had had five or six children,) her labour had generally been of two or three days and nights' duration. When between seven and eight months advanced in her tenth pregnancy, accidental hemorrhage supervened, and the experience which the author had of the natural rigidity of the os uteri, induced him to rupture the membranes, and, fortunately, it proved successful.

He can imagine one other case which might justify this practice, viz. where the operation of turning is opposed by the patient or

attendants. He has met with a few cases where the patients consented most reluctantly to his interference, and he has no doubt that they would have positively refused to submit to that of a less experienced practitioner. In such cases, it is fair to give the poor woman a chance of life by discharging the liquor amnii.

With these exceptions, the practice in accidental hemorrhage must be the same as in hemorrhage from the attachment of the placenta over the os uteri—that is, whenever danger threatens, the operation of turning must be had recourse to.

Experience has, for many years, convinced the author that there should be no delay in the adoption of the appropriate practice when symptoms of danger take place, and he cannot understand Dr. Ramsbotham's fears on this subject (p. 188, part ii.¹). Upon many occasions, the patients have been in the utmost extremity when he has been called in, and yet he has never hesitated in instantly forcing delivery (after giving some ardent spirits, if the patient could swallow), and in a great number of those cases, his efforts have been successful.

His conviction is, that the means employed to complete the delivery, rouse the living powers; and he can solemnly affirm, that the chief error he has witnessed in the treatment of those cases has been procrastination. That on some occasions of uterine hemorrhage, during the latter months of pregnancy, no human means can save life, is a melancholy truth; but that, in a very great majority of fatal cases, the indecision of the practitioner is the chief cause of the mischief, he verily believes; and when this subject is seriously considered, a conscientious practitioner would naturally ask himself, what harm can ensue from active interference, before decided symptoms of immediate danger manifest themselves?

Hitherto, the bugbear which seems to have haunted the minds

¹ "When I have been obliged to have recourse to a forced delivery by turning, under a state of great exhaustion, I have frequently fancied, that the shock inflicted upon the nervous system by the violence of the operation, has greatly increased the danger of the woman, and has sometimes induced a fatal result. In reflecting upon this presumption, in cases of sudden depression under a placental presentation, it has seemed to me desirable, if possible, to obtain a truce from the flooding before delivery is attempted, that the system may somewhat rally from its preceding effects. I have therefore thought, that if, in these desperate cases, by any gentle means, the liquor amnii could be discharged, without inducing a greater degree of placental separation, some advantage would be derived from uterine contraction, and the violence of the discharge would be thereby checked. I must, however, in candour declare, that I have not had an opportunity of realising the practical effect of this suggestion, since it occurred to my mind; I offer it, therefore, merely as an object of future consideration. The method I propose is, to penetrate the centre of the placenta by a perforator, or other sharply pointed instrument, and allow the liquor amnii to run off. If the discharge be thereby checked, delivery may be put off for a short time; but if the discharge should continue afterwards, delivery must not be delayed. Let it be clearly understood, however, that this act will not supersede the necessity of delivery sooner or later, and that it will cause some loss of the child's blood from the placental vessels."

of practitioners in the treatment of those cases, is the supposed difficulty, or danger of dilating the os uteri. But if it be practicable, when the membranes are entire, to hook down a lower extremity of the infant, without carrying the hand through the os uteri, which the author most positively affirms that he has done innumerable times; and if, when a lower extremity of the infant is drawn through the uterus, the cervix and os uteri dilate readily and safely, (being duly supported,) which, according to his experience, invariably happens, all objections founded upon the difficulty or danger of turning must be held to be futile.

After extracting the infant and secundines, the complete contraction of the uterus must be secured; and for this purpose, in the early years of his professional life, the author trusted to firm compression of the abdomen, and to the injection of a quantity of cold water into the rectum and into the vagina, by means of a common bag and pipe. But, for many years, he has found the method already described (page 81) to be, in general, adequate to this purpose.

At one time, he was accustomed, in all cases of flooding, where, after delivery, the uterus did not readily contract, to pour from a height a quantity of cold water on the naked belly. Lately he has seldom had recourse to this apparently formidable practice, the more gentle method already described commonly proving efficacious.

The cold affusion in those cases, was employed for a double purpose, viz. to promote the contraction of the uterus, and to force the blood from the surface to the internal vessels, in order to keep up the circulation.

In one very interesting case, which occurred many years ago, he had recourse to the cold affusion with another view. The patient, after bearing her first child, had had alarming hemorrhage. When again in labour, the author dreading the recurrence of the same event, had made his arrangements accordingly. After the birth of the infant, he waited for the natural separation of the placenta, but, to his horror, in less than five minutes after the birth of the infant, strong bearing down pains took place, the placenta was thrown off, followed by a deluge of blood, by violent convulsions of the muscles of the face, and by apparent expiration.

Nothing, in the author's opinion, could restore animation but exciting the action of the respiratory organs, and for this purpose, he dashed a quantity of cold water on the naked chest. A deep inspiration was the immediate effect, and the patient recovered. She had afterwards two children, without any threatening of hemorrhage.

Having checked the hemorrhage, the practitioner is to direct his attention to supporting the living powers by suitable cordials and nourishment. Where the loss has been considerable, large doses of opium, such as a three grain pill every three or four hours, have been found highly useful. The tincture of opium is apt to be vomited, even though given mixed with wine or brandy.

If the patient cannot swallow, opiates are to be administered as

enemata, flannels soaked in warm brandy are to be kept applied to the pit of the stomach, and the face and hands should be occasionally bathed with ardent spirits.

Under such circumstances, it has been proposed to transfuse blood from a vein of a healthy individual into that of the patient who seems exhausted, and certain experiments, apparently confirming the utility of the practice, have been published.

The objections which the author has been accustomed to urge against this proposal, are, in the *first* place, that from all the phenomena where uterine hemorrhage proves fatal, there is reason to conclude that the cause of death is paralysis, or some analogous condition of the respiratory nerves, and it does not seem probable that, after this change has begun, any trifling addition to the circulating mass of blood could remedy it. If death could be proved to be owing to the supply of blood not being sufficient to keep up the action of the heart, transfusion might be a plausible means of relief.

A *second* objection which he has urged, is founded upon the recorded cases being too few and too little varied to warrant any general inferences. The recoveries which the author has witnessed, under circumstances apparently hopeless, lead him to be very sceptical in the belief, that the transfusion of a few ounces of blood could have the effect ascribed to it by those who have so strongly recommended this practice. Out of innumerable cases of recovery where the symptoms seemed desperate he need only mention two. In the one case, the patient continued from nine in the morning till six in the evening, incapable of swallowing or articulating, with no pulsation at the wrists, and with cold extremities. As she breathed, and had neither convulsions nor groaning, external stimulants were sedulously applied, and opiate enemata administered. She eventually recovered, and although the case happened more than fifteen years ago, she is still alive and in good health.

As to the second case, the lady had lost two wash-hand basinsfuls of blood before the author's arrival. She had no pulse at the wrists, but was able so far to speak as to request to be allowed to die undisturbed. She was prevailed upon, however, to submit to delivery, and a living infant was extracted. The pulse continued imperceptible for above three hours and a half, when the author left her (in consequence of urgent engagements) under the charge of a very intelligent practitioner. As after pains had begun, her eventual recovery was confidently predicted, and the lady is now in good health. Had a few ounces of blood been transfused in those two cases, the recovery would have been naturally ascribed to that remedy.

Dr. Collins's late valuable publication confirms the author's objection to this practice. In two cases where it was had recourse to, in the Dublin Lying-in Hospital, it proved unsuccessful, and in one of the cases prejudicial, according to Dr. Collins's opinion. In the first case, "about ten ounces of blood from a healthy young woman were easily thrown into the median vein of the patient's

right arm. She expired a few minutes after the operation." Dr. Collins adds (page 130)—"We rather think that transfusion hastened her death."

"Between eight and ten ounces of blood were slowly and carefully injected into the median vein," in the second case recorded (page 159), "but the patient died a few minutes after the operation." This case confirms, in a very unexpected manner, the chief objection to this practice which the author has always urged. Dr. Collins states (page 161), that "on dissection, the right auricle was found greatly distended with blood in a fluid state, so much so, that previous to opening it, it felt as if it contained air, but none whatever was observed in it. The other cavities of this organ were quite empty, the injected blood seeming to have passed no farther than the right auricle."

When the patient becomes capable of swallowing, cordials and light nourishment, adapted to the habits and circumstances of the individual, must be carefully administered. Young practitioners are apt to be alarmed by the vomiting which often occurs in those cases; but if the pulse at the wrists be distinct, the vomiting will be found to accelerate the rallying of the living powers.

Respecting the after treatment of patients who have recovered from excessive loss of blood, the chief circumstance which the author has endeavoured to impress upon the profession, is the necessity for limiting the quantity of liquids, allowed by way of nourishment or drink, for the first two or three weeks. He has repeatedly been called to cases, where, from inattention to this regulation, inflammatory symptoms requiring venesection had supervened, and where the injurious consequences of indulging in diluents were plainly manifested by the appearance of the subtracted blood. In one case, where it was necessary to draw two breakfast cupfuls, amounting to twenty-four ounces at least, the crassamentum in each cup did not exceed the size of the yolk of an ordinary hen's egg.

SECTION II.—HEMORRHAGE OCCURRING DURING THE FIRST TWO STAGES OF LABOUR.

For many years of the author's professional life, he did not believe, that after uterine contractions had really commenced, there could be such a degree of hemorrhage previous to the birth of the infant as to require interference. But within these twenty years he has been called to a few cases of that description.

In some of those cases the symptoms were so imperfectly detailed to him, that he could not positively decide whether the placenta had been originally attached over the os uteri, or had been accidentally separated during the first stage of labour. The circumstances which led him to suspect that it had not been originally over the os uteri, were, the allegation that the patient had attained the full period of utero-gestation, and that labour throes had preceded the hemorrhage.

If he could have depended upon the accuracy of those accounts, he should have at once understood the nature of the case, because, notwithstanding the allegations of some most respectable practitioners, he cannot believe it possible, that in any case where the placenta is implanted over the cervix uteri, the woman could go on to the full period of pregnancy without a discharge of blood, and still less that, under such circumstances, uterine contractions should precede hemorrhage. But in the cases alluded to, he could place no reliance upon the history of the symptoms.

He has, however, now witnessed two cases where there could be no doubt that the placenta, though originally attached to the fundus or body of the uterus, separated in the progress of the labour, and produced fatal hemorrhage.

In the first case, it was the lady's ninth pregnancy, and her health was unimpaired. She sent for her medical attendant, a most intelligent and experienced practitioner, early before breakfast, and on his arrival he found the labour pains weak and lingering. As they continued trifling for some hours, she expressed a wish that the doctor should visit any of his patients whose cases might be urgent. But as he was preparing to take advantage of this permission, he had a sudden summons to her bedroom, in consequence of her having unexpectedly become sick and faintish. On giving her some stimulants, the labour throes increased in power and frequency, and were accompanied with a discharge of a few coagula. Within less than an hour a still-born infant was thrown off, followed instantly by the expulsion of the placenta, and a profuse discharge of blood.

All the ordinary means for supporting the living powers and promoting the contraction of the uterus were most anxiously and actively employed, and when the author was called to visit the patient, his impression was, that those means had been successful; nevertheless she sank within less than half an hour.

The subject of the other case had had several children. She began to have slight labour pains soon after midnight. About five of the morning a few clots of blood were discharged, and from that time every now and then the same circumstance happened. When the author's assistance was requested, which was about four hours after the first appearance of the discharge, he found her strength much reduced, and, on examination, he plainly perceived the loosened edge of the placenta pressing at the right side upon the os uteri, which was so dilated that a crown piece could have been passed through it. Instant delivery was had recourse to. The extraction of the infant, which was quite dead, was followed by the discharge of the placenta and a considerable quantity of coagulated blood. As the uterus contracted, and the strength and spirits of the sufferer somewhat rallied, hopes were entertained that the event would prove favourable. In a few minutes, however, there was a sudden gush of blood, and although its progress was quickly checked, distressed groaning supervened, and in a short time the event proved fatal.

By what mechanical cause the separation of the placenta happened in these two cases the author has never been able to explain. He was solemnly assured, that in both instances the individuals had been in previous good health, and that the labour pains at first had been trifling; there was, therefore, apparently no mechanical cause for the separation of the placenta.

Both those cases very unequivocally prove the fallacy of the opinion which has been so prevalent among the profession, that in accidental separation of the placenta, the induction of uterine contractions can stop the discharge. It is to impress this precept upon the minds of young practitioners that those distressing cases are recorded.

SECTION III.—HEMORRHAGE AFTER DELIVERY.

That sometimes alarming discharges of blood take place after the completion of the three stages of labour, was well known to the profession; but when the author studied, the hazard of internal uterine hemorrhage supervening to delivery was not even imagined. In the first case to which he was called the patient was dead before his arrival, and although the circumstances led him to believe that there must have been internal hemorrhage, he was not permitted to ascertain the fact.

But within a very short time after that occurrence he received the particulars of a case, from an old pupil of his father, which completely confirmed his opinion. The wife of a respectable tradesman in a country town unexpectedly died, within less than two hours after delivery. The corpse was laid out upon a table, in a spare room, and, to the horror of the attendants, on entering the room next morning the floor was found covered with blood. From that date, which happened nearly forty years ago, the author has been accustomed to explain this cause of danger to his pupils, and to point out the appropriate practice.

Of this untoward accident the evidences are, languor, continued pain in the small of the back, faintishness or sickness, feebleness of the pulse, singing of the ears, swimming of the head, and if these symptoms be disregarded, oppression at the precordia, great restlessness, laborious breathing, sudden delirium, with a pallid countenance, coldness of the surface and convulsions, rapidly follow.

It has been already stated (page 81), that in some cases the cervix uteri, after the expulsion of the infant and secundines, remains in a relaxed state, forming one continuous canal with the vagina, while the fundus and body of the uterus contract. Under those circumstances, the vessels of the cervix gradually pour out blood, and this congealing and accumulating within the vagina, in consequence partly of the position of the patient, and partly of the contraction of the external parts, eventually forms a mass which mechanically dilates the body of the uterus, and permits the access of blood to its arterial trunks. A sudden increase of effusion is the necessary consequence.

Internal uterine hemorrhage supervenes to delivery, under another combination of circumstances. While the cervix and os uteri contract, the fundus and body of the uterus are quite inert, and the cavity thus produced is rapidly filled with blood, which instantly congeals. The coagulum thus formed is soon increased to a large size, sinking quickly the living powers.

These two degrees of the accident explain the discrepancies in respect to time, at which symptoms of danger take place. In the former case, from one to three hours may elapse before the patient seems to suffer, while, in the latter case, the symptoms of danger occur within the hour.

There is no difficulty in ascertaining the nature of the case, for whether the accumulation has begun in the cervix uteri and vagina, or in the cavity of the uterus, the untoward symptoms do not manifest themselves till the whole passage be filled with coagulated blood. On introducing, therefore, two fingers into the vagina, the accumulation will be at once detected.

The individuals liable to this accident, are those in whom the first stage of labour has been protracted beyond twelve hours—those who have been subjected to instrumental delivery—those who have had a large family—those who have had their habit relaxed and debilitated by previous disease, and those who have born twins or triplers.

Besides these predisposing causes, there is reason to believe, that peculiarity of constitution, or certain conditions of the system, have a tendency to produce this effect. Thus, a remarkably healthy person, not above twenty-six years of age, was confined of her second child, under the author's care. Most alarming internal hemorrhage followed, and he was then informed that the same circumstance had occurred after her first confinement. After her third, fourth, and fifth delivery, there was no threatening of the recurrence of the accident, but after being delivered of her sixth child the discharge proved overwhelming, and she was saved with great difficulty.

Contrasted with this, another case may be stated. The patient was a very delicate relaxed person, and after bearing two or three children she had very alarming internal hemorrhage for three or four successive times; but in her last four or five deliveries, though she is now the mother of a large family, she has had no threatening of the accident, and yet the vigour of her frame is not improved.

These facts lead the author to believe, that although, generally speaking, internal uterine hemorrhage supervening after delivery is occasioned by imperfect contraction of the uterus, there may, in some cases, be a violent determination of blood to the uterine vessels.

For the management of such alarming cases the most prompt and energetic measures must be adopted. The accumulated blood must be instantly extracted by the introduction of the right hand,¹

¹ The author has often drawn out, in those cases, as much blood as would fill an ordinary wash-hand basin.

and the uterus must be forced into contraction. As already stated (page 81), the author, for many years, has succeeded in accomplishing this by means of pressure with his hand; but in alarming cases, where there has been a great loss before the nature of the case was understood, in addition to the manual assistance, a quantity of cold water should be dashed on the naked belly. After the contraction of the uterus is thus secured, the means detailed (page 87) are to be adopted.

Mons. Trehan has proposed (vol. 33d of the *Journal Complementary du Dictionnaire des Sciences Medicales*, p. 367), compressing the aorta, in those cases of hemorrhage after delivery. With this view, he advises the practitioner to stand on the left side of the woman, and with the fingers of the right hand placed in a line, so to force down the abdominal parietes, as to feel the pulsations of the aorta over the lumbar vertebræ. That artery is then to be firmly compressed for six or seven minutes. But the editors of the *Journal Complementary* have stated, that in one of Mons. Trehan's cases, the hemorrhage returned three times, notwithstanding the compression of the aorta, and that in another case where the placenta was retained, Mons. Trehan adopted this practice, but it proved so inefficacious that another practitioner was called in, and, notwithstanding the immediate extraction of the secundines, the patient was lost.

Above forty-six years ago, the late celebrated Dr. Denman suggested to the author, in presence of Dr. John Hemming, then physician to the Onslow Dispensary, a similar method. Dr. Denman's suggestion was a more plausible one than that of Mons. Trehan. It was to introduce the hand into the uterus, and to compress the aorta just above its bifurcation.

The author was then a very young man, but he ventured to state, with becoming deference, that although the aorta were thus compressed, it could only stop the flow to the uterine hypogastrics, for the spermatics come off from the aorta above its bifurcation; besides, in some individuals, those arteries proceed from the emulgents. But as the different arterial branches supplying the uterus communicate freely and extensively with each other, the blood transmitted to the spermatics would necessarily pass through the open extremities of both sets of arteries.

Indeed, even at that early period of the author's professional life, he was so strongly impressed with the absurdity of this proposal, that he ventured to tell his friend Dr. Hemming, that he did not believe it could ever be seriously attempted, by any individual who had witnessed the rapidity of the symptoms in cases of hemorrhage, and who had any knowledge of the anatomical structure of the uterine system.

On the means of preventing the occurrence of hemorrhage after delivery, the author can say nothing satisfactory. The slow extraction of the placenta, and firm compression of the abdomen, by the use of a suitable compress and roller, are the means to which he trusts. As to the ergot of rye, in which many practitioners confide,

he has already stated his reasons for believing that medicine to be quite inert.

CONVULSIONS DURING PREGNANCY AND LABOUR.

Dr. Ramsbotham has well remarked, that "in the variety of afflictive occurrences to which the latter stages of pregnancy and the act of parturition are especially liable, there is no one so terrific in appearance as an attack of convulsions. Other affections may perhaps be equally dangerous to life, but they are divested of that horror which convulsions occasion."

The phenomena of convulsions during pregnancy or labour are indeed such as to excite sympathy and apprehension to the utmost possible degree. While the muscles of the face, and those of the body and extremities subservient to motion, are violently and involuntarily contracted and relaxed, there is an appearance of the countenance which is truly frightful. The face is flushed, and sometimes of a dark purple hue, the eyes are turned up and the tongue is alternately protruded and retracted, with a hissing noise, followed by frothing at the mouth, the froth being sometimes tinged with blood, the veins of the neck and temples are greatly distended, and the carotid arteries beat inordinately. The duration of the fit is very various, sometimes not exceeding a few minutes, and sometimes extending to above half an hour.

After the fit has ceased, the patient, in the majority of cases, remains insensible, and apparently in a profound sleep, from which she is only roused by a second attack. But, in some cases, the moment the fit is over, the patient becomes conscious, and feels as if she had been dreaming, being totally unaware of her previous suffering. Generally speaking, the immediate return of sensibility follows only slight fits of short duration, but the author has met with a few exceptions, that is, where, after a fit has lasted from twenty to thirty minutes, consciousness followed almost immediately on its termination. He has seen also a few cases where super-sensation occurred when the fit ceased.

If the case be left to the resources of nature, the fits recur, with increasing frequency, till the living powers become exhausted. In many of those cases, there are modifications in the phenomena; thus, there is most violent grinding of the teeth, instead of forcible protrusion of the tongue, the convulsions are more severe on one side of the person, instead of equally affecting both sides, and during the intervals, there is stertorous breathing, with occasional convulsive starting, instead of profound oppressive sleep.

At first, during the intervals between the fits, the pulse is slow and oppressed, the pupils of the eye dilated, and the heat of the surface increased; but as the fits continue, the pulse becomes frequent and irregular, the pupils are contracted, and the surface is covered with a clammy exudation.

It seldom happens that a single fit proves fatal, though the author has witnessed a few instances where that happened. He has repeatedly seen death follow a second fit. Where a succession of fits precedes the fatal event, the phenomena previous to death very much resemble those of apoplexy, that is, along with the almost continued convulsions, there is stertorous breathing with turgid countenance.

Of those symptoms, the total insensibility which invariably accompanies the convulsions, furnishes the great mark of distinction between this formidable disease and hysterical affections. Modifications of hysteria certainly upon some occasions resemble very nearly in the involuntary contractions and relaxations of the muscles subservient to motion, the disease in question, but in such cases the patient can be made to swallow on being desired to do so.

Dr. Burns has very well described, in the following words, the ordinary hysterical affections which occur during pregnancy. "Hysterical convulsions are not uncommon during gestation, and more especially during the first four months. They occur in irritable and excitable habits, or in those who are naturally disposed to syncope, or who have been exhausted by any pain depriving them of rest, or by alvine discharges. They are distinguished by the face usually being pale during the attack, the countenance is very little distorted, there is no foam issuing from the mouth, the patient for a time lies as in a faint, and then has convulsive motions, or screams and sobs, and the fit is generally terminated by shedding tears."

The affections, however, thus described, could scarcely be mistaken for eclampsia. But, as already mentioned, cases occasionally occur where hysteria does so imitate the phenomena of true eclampsia, that the only mark of distinction is, the insensibility which attends the latter disease.

Formerly the convulsions peculiar to pregnancy were confounded with epilepsy, by the profession at large, and the author believes that he was the first who pointed out minutely the marks of distinction. In the fifth volume of Dr. Duncan's *Annals of Medicine* for the year 1800, he published the following observations.

"The old distinction between eclampsia and epilepsia has been rejected by Dr. Cullen, without sufficient reason. The convulsions that occur during pregnancy and labour should be distinguished by the former name, for the disease is always an acute one, and it never, as far as my experience goes, lays the foundation for habitual epilepsy. To an inattentive practitioner, indeed, the phenomena appear similar to those of epilepsy; but, independent of its violence and fatality, there are many circumstances peculiar to it. This has been remarked by several authors, particularly by Dr. Denman; but those circumstances have never been accurately pointed out in any publication which has fallen into my hands.

"But the eclampsia, peculiar to pregnancy and labour, differs from epilepsy in the following respects:—

"1. The symptoms which precede the attack are well marked,

announcing to an experienced practitioner the approach of the disease.

"2. If the first fit do not prove fatal, and if no means of cure be attempted, it is within a few hours followed by other paroxysms, provided delivery do not take place.

"3. After the paroxysms, even where they have been severe, the patient in many cases continues quite sensible during the intervals, and the sensibility returns the moment the fit is off.

"4. What may appear still more extraordinary is, that, in some cases, there is a remarkably increased susceptibility of impression of the external senses; and this supersensation is not confined to patients in whom the convulsions are slight.

"5. The aura epileptica never occurs in the cases alluded to.

"6. The pulse is, in every case, affected in some degree during the remissions of the fits. It is slow, or oppressed, or intermitting, or frequent and feeble. But it is most commonly slow and oppressed, becoming fuller and more frequent after blood-letting." His experience since that time has amply confirmed the accuracy of those remarks.

Having premised these general observations, the author proceeds to consider the phenomena and treatment of convulsions occurring in the latter months of pregnancy, or during or after the act of parturition.

SECTION I.—CONVULSIONS DURING THE LATTER MONTHS OF PREGNANCY.

Convulsions during pregnancy seldom occur before the completion of the seventh month, insomuch that the author has not seen more than a few cases which were exceptions to this general rule. The fits are preceded most frequently by lancinating pain of the head,¹ sometimes by crampish pain of the stomach, and sometimes by œdematous swelling of the face and upper parts of the person.

"Fixed pain in one part of the back, with or preceding the affection of the head," has been mentioned by Dr. Burns (page 236) as sometimes occurring. The author has never met with any case in which this symptom was present.

Where the fits terminate fatally, the appearances after death show that the uterus had burst,² or that there is great turgescence of the vessels, or an effusion of blood or serum, within the cranium.³ When a single fit destroys life, it is found that there had been rupture of the uterus, and when there has been a succession of fits

¹ Dr. Burns has well pointed out (page 237), the distinction between those degrees of headache which portend the occurrence of convulsions, and those to which many individuals are habitually liable.

² Dr. Collins, page 203.

³ Dr. Denman, vol. ii. page 258—Dr. Dewees, sixth edition, page 462—Dr. Ramsbotham, part ii. page 273.

previous to death, the above morbid appearances within the cranium have been discovered.

As to the prognosis, it must be always guarded in individual cases, because a single fit may kill. When the author began practice, this affection was considered perhaps the most fatal which occurred in pregnancy or during labour, but for many years past it has proved more formidable than fatal.

When the fits continue for a certain time, the circumstances which portend danger are, the increased frequency of the fits, with total insensibility, and stertorous breathing, and occasional distressed groaning during their intervals. On the other hand, recovery may be expected, if the intervals between the fits increase, and if the breathing be natural, although the insensibility continue.

With respect to the causes of convulsions during pregnancy, there is no doubt in the author's mind, that the predisponent cause is, the peculiar condition of the system which accompanies utero-gestation, because circumstances occasion convulsions in that state, which have no such influence in women who are not pregnant. Dr. Burns entertains the same opinion. (Page 484.)

Admitting this fact, it may be interesting to ascertain the peculiar condition of the system during pregnancy, which occasions this predisposition. It has always appeared to the author, that the augmented quantity of circulating blood, the pressure of the gravid uterus on the great blood vessels passing through the abdomen, and the increased susceptibility of impression of the nervous system, must necessarily, for the time, alter greatly the constitution of the individual.

Besides these predisponent causes, there are two others which have not been sufficiently attended to, viz. great distension of the abdomen and œdematous swelling of the upper parts of the person, especially the face, chiefly observed in the morning on rising from bed.

Dr. Denman, and many other respectable authors, imagine that peculiarity of constitution predisposes to convulsions in pregnant women. He says (vol. ii. page 362), "But it is not only in weak and very nervous habits that convulsions occur, as they sometimes happen in plethoric constitutions, and are accompanied with a strong action of the vascular system in general, or of some particular part of the body; though I do not recollect a case which could be attributed solely to this cause. With such different constitutions and indications, some with all the symptoms of debility and depression, and others of plethora and fever, the method of treatment must of course vary."

From all that the author has seen, he is convinced, that while pregnant women of every different constitution are liable to convulsions, when exposed to any of the exciting causes, the robust and plethoric are certainly more subject than others to this alarming affection.

These circumstances, as predisposing to convulsions, were stated by the author (*Annals of Medicine for 1800*, page 329) above

thirty-five years ago, and his experience since that time has tended to confirm the opinion. In the observations referred to, it is remarked, that "women in their first pregnancy, and those who carry more than one infant in utero, are most liable to convulsions," a fact which has been completely established by the observations of many respectable practitioners. Dr. Collins, for example, mentions, that in thirty cases of convulsions occurring in the Dublin Lying-in Hospital during his mastership, twenty-nine were patients pregnant for the first time, and two of the thirty had twins. Dr. Merriman (*Synopsis*, page 141) states, that twenty-eight out of thirty-six cases of convulsions which he had witnessed, were instances of a first pregnancy, and that in two of the number there were twins.

It appears to be Dr. Burns's opinion, that the state of the spinal cord predisposes to convulsions. He says (page 236), "I am pretty well satisfied, that in most cases, although the head be pained, yet the spinal cord is the part originally diseased, and the head only suffers in a secondary way." The author has never been able to detect any evidence of an affection of the spinal cord, or the nerves issuing from it, in this disease.

Little difference of opinion has prevailed respecting the exciting causes of convulsions during the latter months of pregnancy. Corporeal or mental agitation, and all circumstances occasioning fatigue or violent pain, are generally enumerated as such.

All the phenomena of the disease indicate, that what is termed the proximate cause, is some affection of the brain. The convulsions, the insensibility, and the stertorous breathing, are well known to follow injuries of the head from mechanical causes; and the distended state of the vessels, and the serous and bloody effusions discovered within the cranium in fatal cases, so unequivocally support this doctrine, that it must seem wonderful that it could ever have been controverted.

The only explanation of a difference of opinion on this subject which the author can fancy to himself, is, that hysterical affections and convulsions, supervening to excessive loss of blood, have been confounded with the disease now under discussion. Thus, Dr. Dewees has (in his sixth edition, page 463) recorded as a case of convulsions, a well-marked instance of hysterical paroxysms.

For the treatment of those alarming cases, various contradictory means were recommended by practitioners of the highest reputation, when the author began practice. Even in the year 1801, Dr. Denman expressed himself in the following terms (vol. ii. page 356): "In consultations in cases of this kind, I have generally observed, that the person who advanced his opinion in the most confident manner, prevailed on the rest to acquiesce in his sentiments; the records of experience having been thought insufficient, or not so duly weighed, as to satisfy our minds, or to justify our forming an irrefragable rule of practice."

Accordingly, from the time the author studied till the year 1791, he had occasion annually to see several women die from convul-

sions during the latter months of pregnancy. The practice adopted was, insinuating a cork, wrapped in a piece of linen rag, between the jaws to protect the tongue, venesection from the arm, active purgative clysters, dashing cold water on the face whenever the fit threatened, and accelerating delivery, if there were any natural tendency to that process.

As he observed that always after the bleeding, a considerable interval elapsed before another fit came on, it occurred to him, that perhaps the subtraction of blood had not been carried far enough. Adverting to the fact, that although the phenomena towards the fatal termination of convulsions be apparently those of apoplexy, the previous condition of the vascular system must be very different in the two cases, he inferred, that a large bleeding might probably relieve the vessels within the cranium more effectually than could be expected in cases of apoplexy, where, in general, some morbid state of the blood-vessels prevails. In the first case, therefore, which happened in the lying-in-ward of the Royal Infirmary here, during the year 1791, he directed bleeding to the extent of fifty ounces by weight at once, and the success was so remarkable as to warrant his continuing the experiment.

In the observations inserted in Dr. Duncan's Medical Annals for 1800, it is stated, that "during fifteen months previous to September, 1800, the author had been called to twelve cases of convulsions during pregnancy, and that every patient recovered." Since that time, he has not seen a single fatal case of convulsions previous to labour, excepting three, where the symptoms were hopeless before he was sent for, and he attributes this success entirely to the large bleedings. He never directs less than about fifty ounces by weight to be drawn at first, and if there be not a decided improvement within the hour, he advises the same quantity to be again subtracted. He is quite convinced that no other than slight degrees of the disease can be expected to yield to bleeding carried to the extent only of twenty or thirty ounces, a practice which he sees recommended by some respectable practitioners of the present day.

Experience has taught him, in directing the first bleeding, to disregard peculiarity of constitution, for the most delicate persons require the same quantity to be subtracted at first as the most robust. In a large proportion of the individuals in the lower ranks, who have been apparently saved by this practice, the diet had, previous to the occurrence of the disease, been for months, perhaps for years, chiefly or entirely farinaceous; and in several of the cases in the better ranks, the subjects were of a feeble delicate habit. The symptoms were so urgent in some of the patients of the latter description, when the author's aid was requested, that he recommended a vein to be opened at once in both arms.

One remarkable illustration of the efficacy of this practice occurred many years ago. The lady was of a very weakly habit, having been for years almost constantly an invalid. After having undergone considerable fatigue when between seven and eight months pregnant of her second child, she complained of severe

crampish pain in the stomach, for which thirty drops of laudanum were administered. Soon after this, violent convulsions came on, and the author was sent for. He directed sixty ounces (by weight) of blood to be drawn; and although the fits occasionally recurred, and she continued in a state of insensibility for three days (premature labour having taken place in the meanwhile), she eventually recovered. In this case, the increased quantity of blood was drawn, in consequence of the patient having had an opiate, and this is the only instance of recovery where a dose of laudanum had been given, previous to the use of the lancet, which has fallen under the notice of the author.

At one period of his life, he advised the blood to be drawn from the jugular vein, but he met with so many cases of failure in the performance of the operation, that he was obliged to adopt, as the general rule, the ordinary practice of bleeding from the arm.

He was called to a case in the year 1799, where, from the extent of the œdema, it was impossible to obtain, either by means of the lancet or of leeches, a sufficient discharge of blood, and the only means of relieving the symptoms, as the patient could not swallow, were shaving the head and covering its whole surface with blistering plaster. The frequency and violence of the fits continued to increase for many hours, and the case was considered hopeless, but at last an immense discharge issued from the blistered parts, and a remission of the fits for four or five hours followed, during which, the power of deglutition was in some measure restored.

A fresh blister was now applied, and a dose of the saturated tincture of digitalis was given every half hour, till a very copious discharge of urine occurred, when large doses of camphor were substituted, and eventually the fits ceased. The pregnancy went on for another fortnight, when labour began, and the patient was safely delivered of a dead infant.

Nearly thirty-three years elapsed before the author met with a similar case; and although the symptoms were perhaps still more alarming, the patient eventually recovered, and has since borne two children without any untoward symptoms.¹

After venesection, an active purgative enema should be administered, and a careful enquiry into all the circumstances of the case is to be instituted, for the purpose of ascertaining the nature of the exciting cause.

The propriety of inducing labour artificially in such cases, is one of those points on which there has been a difference of opinion amongst practitioners of deserved eminence. Thus, Dr. Burns says, page 237, "but in no case are we to endeavour to bring on labour, or force delivery." This practical precept is, in the author's opinion, expressed rather too strongly. Dr. Burns admits,

¹ The particulars of those two cases are recorded in the Appendix, not only because they illustrate the author's practice, but because they furnish a picture of the disease well calculated to impress the phenomena upon the mind of young practitioners.

that if uterine contractions spontaneously occur, the practitioner must assist. But there is another case imperiously demanding interference, viz. over distension of the abdomen.

This may be the consequence of plurality of children, or of an extraordinary quantity of liquor amnii,¹ or of a combination of ascites and pregnancy. In all such cases, the unusual pressure on the great blood vessels passing through the abdomen, if not the original cause of the convulsions, must at any rate tend to continue them. It is obvious, that the only remedy in such cases, is procuring, in the first place, the discharge of the liquor amnii.

Premature contractions of the uterus so often occur in the progress of convulsions during the latter months, that they are to be expected, and of course anxiously looked for. Not only ought the state of the uterus to be felt through the parietes of the abdomen on the approach of the fit, but that of the os uteri should be every now and then ascertained after the occurrence of the convulsion. Many cases have fallen under the author's observation, where there had been several violent convulsions, without any impression on the uterus, and yet where a single fit completed the dilatation.

Guided by these principles, the author can declare that, since 1791, he has not lost a patient affected with convulsions in the latter months of pregnancy, in whom he deemed it necessary to induce artificial delivery, with the exception of a few cases where opiates had been given before his assistance was requested. Those cases occurred previous to the year 1801 (when his opinion on the treatment of convulsions was published in Dr. Duncan's Annals), by which publication general practitioners were made acquainted with the injurious effects of opiates.

SECTION II.—CONVULSIONS DURING LABOUR.

Certain symptoms invariably precede the occurrence of convulsions during labour, viz. violent headache, or slight wandering of the mind, as in dreaming, or such tremors, after the infant fills the pelvis, as to shake the bed, or overpowering sleep, with snorting breathing. In some cases, the patient screams out, immediately before the fit, that she cannot see, or that there is a flash of fire before her eyes, or that the room is running round.

Besides these symptoms, Professor Burns says (page 481), "or there may be more fixed and constant pain felt in some part of the spine, and always confined to that, without any pain in the head. In other cases, the first indication is violent pain in the stomach, with insupportable sickness."

With respect to the former of those symptoms, the author has never witnessed one instance of it in convulsions, either during pregnancy, or during labour. As to the latter symptom, he has often met with it as a precursory symptom in the latter months of

¹ The author has repeatedly met with cases where there had been three wash-hand basinsfuls of liquor amnii.

pregnancy, but he has not seen a single case where it occurred in the course of the actual labour.

For many years the author could not explain the allegation of some most respectable practitioners, that convulsions may happen during labour, without any previous warning. Thus Dr. Rambotham says (part ii. page 262), "the seizure is generally unexpected and sudden, instantly exciting the greatest alarm. It happens at a time, perhaps, when the labour appears to be going on favourably, and to promise a happy termination. But this astounding occurrence at once intervenes to cloud the brightness of the prospect, and to blight all antecedent hopes."

Dr. Collins says (page 199), "this attack occasionally sets in without the medical attendant being aware of its approach, in consequence of there being no decided premonitory symptoms."

Professor Burns makes a similar remark. He says (page 481), "convulsions may affect the patient suddenly and severely. She rises to go to stool, and falls down convulsed; or, sitting in her chair, conversing with her attendants, her countenance suddenly alters, and she is seized with a fit; or she has been lying in a sleep, and the nurse is all at once alarmed by the shaking of the bed, and the strong agitation of her patient. Immediately, all is confusion and dismay, and the screams of the females announce that something very terrible has happened."

At last, however, a case occurred which convinced him that the opinion, that convulsions during labour might supervene without previous warning, did not arise from inattentive observation, but from the patient accidentally or intentionally concealing her feelings. A lady who had married in the thirty-seventh year of her age, and had soon after become pregnant, was put under the author's care. Notwithstanding his earnest remonstrances, she indulged during the whole course of her pregnancy, to the greatest extent, in the use of diluting beverages, which she herself supposed to be harmless, as they consisted of water, and milk and water. He therefore arranged that, on the occurrence of labour, the family surgeon should be in attendance, as he dreaded the effect of the loaded state of the sanguiferous system.

After the first stage of labour had proceeded regularly and satisfactorily, the head of the infant began to press upon the perinæum, and then a violent convulsion took place. While the surgeon was bleeding the patient, who was quite insensible, the author stated to the attendants, that he had never before known an instance of convulsions during labour without some premonitory symptom, such as pain of the head, &c. The lady's maid instantly mentioned, that her mistress, at the commencement of labour, had told her that she had a violent headache, and had enjoined her to conceal it from the doctor, as she had a great horror at being bled. Accordingly, her orders were faithfully obeyed, for although she was repeatedly asked, during the progress of the labour, if she had any pain of the head, and that she regularly answered in the negative, the maid remained silent.

This case ended fatally. . After the bleeding consciousness instantly returned, and the lady expressed, in strong language, the relief which she then experienced. The infant was, without delay, extracted by the forceps, but another convulsion supervened, and although the bleeding was repeated the fit ended in death.

Some years after the occurrence of this melancholy case, the author met with a similar instance of prejudice against bleeding, which seems to him to be still more extraordinary. The lady, towards the completion of her first pregnancy, had been attacked with convulsions before the author was sent for, and had a narrow escape. She afterwards bore two children with ease and safety. During labour of her fourth child, the appearance of her countenance and the oppression of her pulse excited the author's fears, and he therefore requested the attendance of the family surgeon. He repeatedly stated to the patient that he suspected she had headache, but she always assured him that he was mistaken. From the flushing of her face, &c., however, he insisted on her being bled to the usual extent of fifty ounces by weight. Within ten minutes after the operation a violent convulsion came on. She was instantly delivered, and had no return of the fit. She afterwards admitted that she had concealed the headache from the dread of being bled.

The exciting causes of convulsions during labour, are, violent or long-continued uterine contractions, or injurious pressure upon the nerve passing through the foramina of the sacrum. A few cases have occurred where agitation of the mind seemed the cause of the fits.

Another opinion on this subject has been proposed by Professor Burns. He says (page 484), "I am inclined to think that, in a majority of instances, the spinal cord is first affected by the state of the uterine nerves, and immediately afterwards the head suffers. A strong predisposition is given to this condition of the nervous system by a bad state of the bowels, and labour seems to bring the matter to a serious crisis." In further illustration of this opinion he says, in noticing the distinction between epilepsy and eclampsia, "Whilst the symptoms are the same in both diseases, they arise in epilepsy from some organic affection of the brain, or direct irritation of that organ, whilst in eclampsia they rather depend on some sympathetic and temporary cause, very often the uterine irritation acting on the spinal cord and thence on the brain."

From the author's observations he feels compelled to dissent from this opinion of his friend, Professor Burns. He has never seen any evidence of a morbid affection of the spinal cord in those cases, as already stated, and certain facts lead him to doubt that uterine irritation can excite convulsions.

During the latter months of pregnancy, it is well known that convulsions happen while the uterus continues quiescent, and during labour fits seldom come on till the first stage be completed; the fair inference, therefore, is, that convulsions are unconnected

with uterine irritation. A case which occurred several years ago may be cited, as confirming completely this inference.

A lady was put under the author's charge when nearly at the full period of her third pregnancy, in consequence of having had convulsions during her two former labours. On enquiring into the circumstances of her case, he learned, that upon those occasions, whenever the head of the infant had filled the pelvis, violent tremors had come on, followed by delirium and convulsions.

When this lady became in labour under the author's care, the dilatation of the os uteri was carefully watched, and as soon as the aperture equaled the diameter of a crown piece, about forty ounces of blood by weight were subtracted by means of the lancet. The pains proceeded rapidly, and the instant the head cleared the uterus, and the face turned into the hollow of the sacrum, frightful tremors supervened, but as three pains completed the delivery neither insensibility nor convulsions followed.

Within less than two years this patient was again brought under the author's superintendence, and the same practice was adopted. On that occasion the tremors came on as before, and as the infant was larger than formerly, five or six pains were required to expel the head. During the last two pains the patient was evidently in a state of dreaming or slight delirium, but consciousness returned immediately on the birth of the infant.¹

As to the treatment in those cases, when convulsions threaten during labour, venesection is to be had recourse to without a moment's delay, and to be carried to the full extent already specified, whatever the constitution of the patient may be. Dr. Ramsbotham, in his interesting details, has, with his usual candour, recorded evidences both of the fatal consequences of drawing too little blood, and of the good effects of copious venesection.² As Dr. Burns has well remarked, "there is more danger from taking too little blood than from copious evacuation."

One of Dr. Ramsbotham's cases is particularly striking. The patient had had several fits before the doctor was called in. He had her bled from both arms, and "a large basinful of blood (nearly two pounds) were taken away from each orifice. As no beneficial effect was produced by the bleeding, the woman was, with considerable difficulty, delivered by turning. Within an hour after

¹ The subsequent history of this patient having been communicated to the author, from a source which he believes to be authentic, is added in this note:—

The lady was again pregnant, and on the night previous to setting off for Edinburgh, where she was to have been confined, labour unexpectedly came on. She had the attendance of a very intelligent practitioner, who had been furnished with the author's directions by way of precaution. Notwithstanding his care, the tremors which took place when the infant cleared the uterus were followed by insensibility and convulsions, which continued for an hour before delivery. The lady, however, recovered, but some months afterwards sank under the attack of an acute febrile or inflammatory affection.

² Part ii., page 272, *et seq.*

delivery another fit made its appearance, which she did not long survive."—(page 294.)

Dr. Ramsbotham adds, "after a most careful examination of the head no positive breach of vessel could be detected. The blood-vessels of the pia mater were beautifully injected with blood, and a section of the substance of the brain showed more bloody points than usual; there was also a quantity of tinged serum in the ventricles. The vessels of the cerebellum were likewise unusually distended with blood."

It is impossible to resist the impression, that, if in this case there had been a second bleeding to the same extent as the first, the poor woman might have been saved.

After having subtracted a sufficient quantity of blood, delivery ought to be completed as fast as possible. Indeed, it is not easy to understand upon what principle an opposite practice has been adopted, for it must be quite evident, that every labour throe must momentarily influence the circulation within the cranium, and, of course, tend to keep up the fits. Besides, there is the risk that the violent convulsions may burst the uterus. That this is apt to happen from convulsions during the latter months of pregnancy, consists with the knowledge of the author; and that it occurred in three of the thirty cases of convulsions during labour in the Dublin Lying-in Hospital, is admitted by Dr. Collins.

Accordingly, while the interesting cases which occurred in that hospital, so candidly recorded by Dr. Collins, prove incontestably the fatal consequences of delaying delivery, the result of the author's experience establishes unequivocally the importance and utility of extracting the infant by the speediest possible method, for he can solemnly assert, that since the year 1791 he has witnessed only two fatal cases of convulsions during labour.

The first case occurred in July, 1798. The patient had had several fits before he was called. He found the breech of the infant in the passage, and taking the pupil who had sent for him aside, he requested him, in a whisper, to go home for the forceps. None of the attendants heard what was said; but the patient, in whom supersensation had followed the fit, not only heard, but understood it, and instantly exclaimed that nobody should touch her with instruments. By and by, another convulsion took place, and the author delivered her of twins; but the fit continued, and she expired convulsed. The other case was that of the lady who concealed her being affected with headache, as has been already narrated.

Several years ago the author gave a public proof of the utility of this practice, in a case which occurred in the Edinburgh General Lying-in Hospital. The woman had had four fits before his assistance was procured, and she had twice had fifty ounces of blood subtracted. The head of the infant was partially wedged within the brim of the pelvis. While waiting for the necessary instruments, another fit supervened, accompanied with such appearances of strangulation, that the pupils present involuntarily screamed out

that she was gone. The head of the infant was immediately opened, and the woman's recovery was so rapid, that at the end of a week she was walking about in the ward.

If any additional argument in favour of this doctrine were required, the author might appeal to the fact admitted or recorded by the most respectable authors, that the infant, expelled naturally where the mother has been convulsed, has usually been still-born.

Where there has been a succession of fits, they do not cease immediately after delivery, and therefore certain means are necessary to secure the safety of the patient.

Generally, the insensibility continues under such circumstances, and therefore the bleeding, either by means of the lancet or by cupping, should be repeated, a large dose of calomel, mixed with sugar, is to be put into the mouth, and the head is to be shaved and completely covered with a blister. After a few hours a powerful purgative enema is to be administered, to promote the operation of the calomel.

As soon as the patient can swallow large doses of camphor, that is, from five to ten grains, it should be given every two or three hours. This medicine was recommended by the author for cases of this description above thirty years ago, and he can truly declare, that his additional experience has confirmed his opinion of its utility.

From the following observations of Dr. Burns, the author is convinced, that his recommendation of camphor in those cases has been misunderstood. He says, "Camphor has been strongly recommended by Dr. Hamilton as the most powerful internal remedy which can be prescribed; but I cannot, from my own observations, say much respecting its virtues as a preventive."

On reference to the *Annals of Medicine*, (vol. v. page 337,) it will be seen, that it was not as a preventive that the author has ever employed it, but as a means of altering that state of the system on which the continuance of fits after delivery seems to depend, and Dr. Burns himself bears testimony to its efficacy in that respect.

Nauseating doses of tartar emetic have been recommended for those cases by Dr. Evory Kennedy, and they may, in particular instances, prove serviceable; although cases indicating the use of the medicine have not fallen under the author's notice.

Besides the above means, particular symptoms may require palliation, but the author has met with no patient to whom he deemed it necessary to administer an opiate. He mentions this the more particularly, because it is stated in a late publication,¹ that in one very alarming case which occurred in the Dublin Lying-in Hospital, where, notwithstanding powerful depleting means, "the disease was becoming more and more violent under their use, the patient was put freely and rapidly under the influence of opium, and with almost magical effect."

¹ Dublin Journal of Medical Science, vol. x. p. 144.

There must have been some peculiarity in that case which has never fallen under the author's observation. In the *Annals of Medicine* for 1800, he stated (page 340) his opinion upon this subject in the following words,—“I can solemnly declare, that no patient to whose assistance I have been called, who had taken a dose of opium previous to my arrival, has recovered, and I have known that medicine given in almost every variety of dose.”

Since that time, one, and only one exception to this practical remark, has fallen under the author's notice, as has been already stated.

SECTION III.—CONVULSIONS AFTER DELIVERY.

Two modifications of this disease occasionally occur after delivery, though there had been no previous threatening of such an affection, and it is intended in this section to communicate the result of the author's observations on those modifications.

Firstly, Of these, the modification which the author has more commonly seen is the following :—The whole person is strongly agitated, as if from an excessive degree of tremor; the countenance, at the same time, is pallid; the eyes are turned up; there is no frothing at the mouth, nor contractions of the muscles of the tongue and lower jaw, and little contortion of the face; the pulse is feeble or imperceptible, and the surface of the whole person is cold. The premonitory symptoms are, singing of the ears, or swimming of the head, or low muttering delirium. These symptoms arise from loss of blood, and if there have been no apparent hemorrhage it will be found that there is internally an accumulation of blood within the uterus and vagina.

One of the most remarkable cases of this affection which the author has attended, occurred above thirty years ago, and was witnessed by his friend, then his pupil, Dr. Hosack, now physician in Perth. The lady, who was the mother of a family, had been safely delivered at half-past one o'clock, of the afternoon. The author's assistance was requested between two and three hours after delivery. He found the patient in a strong convulsion, with a pallid countenance and cold surface. On stating to the midwife that the lady must be flooding, she drew out a cloth which had been applied to the parts, and showed that it was untinged. The author saw, in a corner of the room, a very large empty earthen basin, which he instantly carried to the bedside, and introducing his hand into the vagina, he extracted a large coagulum of blood, which was followed by an immense discharge of congealed blood.

Notwithstanding every means which could be suggested, the convulsions continued at short intervals, for nine or ten hours, when they began to recur less frequently, and the power of deglutition returned, though consciousness seemed suspended for two or three days longer. The patient eventually recovered, but for many weeks her memory was defective, and, even at the end of six months, her articulation was slow and difficult.

This modification of convulsions is so strongly marked by the pallid countenance—the cold surface—the imperceptible pulse, and particularly by the absence of the violent protrusion and retraction of the tongue, that it can scarcely be mistaken by the veriest tyro.

That this modification is a sympathetic affection, arising from loss of blood, cannot be doubted. It is so commonly the harbinger of death, that recovery in any case is more to be wished for than expected.

In the treatment, the great object to be held in view is to support the living powers, and for this purpose, the most energetic measures are instantly to be adopted.

After removing any accumulations within the uterus or vagina, and guarding against the chance of a recurrence of hemorrhage, a powerful opiate enema must be administered, and (on the supposition that the patient cannot swallow) the face and extremities are to be sedulously rubbed with warmed ardent spirits, while a sinapism is to be applied over the region of the stomach.

As soon as the patient can swallow, opiates and cordials, and mild nourishment, according to the circumstances of the individual case, must be carefully administered. Hitherto, in every instance which has fallen under the author's notice, where consciousness and power of deglutition have been restored, the patient has recovered. But, as already stated, the proportion of recoveries is very inconsiderable.

Secondly, The more uncommon modification of convulsions occurring in the puerperal state, and not preceding delivery, resembles exactly in its phenomena the eclampsia already described. According to the author's experience, the subjects of this affection are individuals of a plethoric or gross habit, and in all the cases which he has seen, the fits were apparently excited by passions of the mind, or irregularities of diet, particularly the abuse of fermented liquors. They were preceded by violent pain of the head. In a few cases they supervened to cramp of the stomach.

For the treatment of such cases, depleting means are alone to be relied upon. The subtraction of a quantity of blood, proportioned to the exigency of the symptoms, the exhibition of a powerful purgative, together with the use of camphor, and a strict antiphlogistic regimen, have proved successful in all cases of this modification which the author has hitherto witnessed. He has not seen one patient sink under this disease, but he has been informed that a few fatal cases have happened in this city within these ten years.

No case of peritonitis after puerperal convulsions, has fallen under the notice of the author.

RUPTURE OF THE UTERUS DURING PREGNANCY AND LABOUR.

When the structure of the gravid uterus at the full period of utero-gestation is considered, it must appear surprising that laceration is not a frequent occurrence, because its substance at that period is so spongy, that the finger of the practitioner, if the hand be within the uterus, can be pressed through it with as much facility as through a wetted sponge. The author has been called to several cases, where he found that the proper texture of the uterus had been thus extensively lacerated, but that the organ itself had been kept entire by means of its peritoneal covering. Such cases always terminated fatally.

In consequence of this structure, the uterus is liable to be ruptured, not only from external and internal mechanical causes, but also from its own inordinate action during the progress of labour. A technical distinction of those cases, therefore, has been made, dividing them into accidental and spontaneous rupture of the uterus.

"Laceration of the uterus may take place, and, in fact, has happened in every different part of the organ, and in every variety of direction, but its most common seat is in the cervix towards the promontory of the sacrum, and its most ordinary direction is transverse." Such was the opinion of the author forty-one years ago (*Select Cases of Midwifery*, page 150), founded upon the recorded cases, and upon the testimony of the most respectable practitioners.

Since that time, his experience enables him to state, that the laceration has been found most commonly in the cervix, sometimes in the body, and very rarely in the fundus. Its line of direction has frequently corresponded with the promontory of the sacrum or the crista pubis, but much more frequently in the former than in the latter. Sometimes the laceration has been towards the side, in a line parallel with, or obliquely towards the spine.

There are two well authenticated modifications of laceration of which the author has seen no instance. The one, according to Dr. Collins, has frequently happened in the Lying-in-Hospital of Dublin. In that modification the rupture had taken place at the junction of the uterus with the vagina. The other modification is admitted to be of very rare occurrence. In it the peritoneal investment of the uterus alone had given way.

According to the observations of the author, when the laceration happens in the transverse direction, more particularly upon the posterior or spinal surface of the uterus, whether in the cervix or body, an immense effusion of blood into the cavity of the abdomen follows; whereas lacerations in the direction of the long diameter, especially in the cervix, are not productive of that effect.

SECTION I.—ACCIDENTAL RUPTURE OF THE UTERUS.

By this term, it is understood that the laceration is the effect of some mechanical cause, independent of the action of the uterus. It

always takes place without any previous warning, and may happen during the latter months of pregnancy, or during labour. It is indicated by sudden severe pain in the belly, aggravated by the slightest movement of the person, or by pressure of the abdomen, followed by sickness, fainting, breathlessness, and more or less rapid sinking of the living powers.

There can be no difficulty in distinguishing rupture of the uterus under such circumstances. The peculiar state of the abdomen, so different from that of its natural condition towards the end of pregnancy, can scarcely be misunderstood. Instead of the defined circumscribed form of the gravid uterus, there is a most irregular tumefaction of the belly, the pressure upon which occasions excruciating agony.

When the uterus bursts before the commencement of labour, the mechanical cause is a fall or a blow, or a fit of convulsions. This latter cause has been overlooked by systematic writers, but it occurred in the first case which the author met with in practice. The patient, at the time between seven and eight months pregnant, had a sudden convulsion. Before his arrival she was dead, and it was afterwards ascertained that the uterus had been ruptured during the fit.

Accidental rupture of the uterus, during labour, comprehends cases where the laceration is occasioned by the ill-directed efforts of the practitioner to assist the delivery, or by the malposition of the infant. Of the former cause, there are many instances upon record where attempts to alter the position of the infant, or to draw it forward by mechanical means, had occasioned this unfortunate accident. The latter cause is a more frequent occurrence than has been supposed. Of the many cases of ruptured uterus which the author has witnessed, in much the greater number the arm of the infant had presented.

On the prognosis it is unnecessary to make any extended observations, for it must be unfavourable in every instance. In stating this general proposition, it is admitted that some individuals have recovered after this accident, but considering the small proportion which such cases bear to the fatal ones, the general rule must remain undisputed. Thus, the late Dr. Alex. Hamilton (the author's father) met with a single case of recovery, and the author has not been more fortunate. It must appear very extraordinary, too, that in that only case of recovery,¹ the symptoms seemed more adverse than in any of the fatal cases, with the exception of those where the patients were moribund, when his assistance was procured.

Considering the nature of the injury consequent upon the rupture of the uterus, it could scarcely have been anticipated that there could be any difference of opinion respecting the mode of treatment, no other resource than immediate delivery apparently affording any chance of saving the patient.

Although, from the unwillingness of British practitioners, to

¹ Recorded Select Cases of Midwifery, page 138.

shock the prejudices of the attendants, by appearing to aggravate the sufferings of a dying woman, many individuals, in whom the uterus had been ruptured, were allowed to expire undelivered, Dr. Garthshore was the first modern author of respectability who, upon principle, recommended trusting to nature in such cases.¹ He says,—

“From the cases I have adduced, I think it appears clearly, that a child, remaining in the cavity of the abdomen, is so far from being necessarily a fatal accident, that it does not even prevent future pregnancies, and consequent natural births; nay, we further know, from a case communicated by Dr. Steigenthal in the *Philosophical Transactions*, that a woman has lived in good health to the age of ninety-four, with a full grown foetus in her abdomen for the last forty-six years of her life, during which period she bore two other children. But what is still more extraordinary, we have good reason to be assured, that women have not only for a considerable time survived, but even sometimes recovered, by the powers of nature, after the child has escaped through a rupture of the uterus. I am, therefore, much inclined to believe, that when this accident happens at any period of pregnancy previous to the complete dilatation, or rather to the easy dilatability of the natural passages, the mother will have a better chance for life, if left to the resources of nature, assisted by palliative remedies, than by a speedy and violent dilatation of the parts, and an extraction of a child through a lacerated uterus, which is likely still to suffer more by such an operation in a constitution much weakened, and at that time highly irritable from pain, anxiety and terror.

“I have myself been called in to ten cases of ruptured uterus, and have before me the account of many others attended by gentlemen of the first abilities and experience. Of these much the greater number were delivered very soon after the rupture took place, but in no instance have I had reason to believe that the mother survived a longer time than she would have done if left entirely to nature; and were I to presume to conjecture from the cases of this kind that have occurred to me, I would say hardly so long.”

These observations seem to have made a strong impression upon the minds of two late physicians in London of the highest eminence, viz. Dr. Sims and Dr. Denman. The former gentleman was called to a case where there could be no doubt of the rupture of the uterus, but as the symptoms were not at the moment urgent, he decided on doing nothing. Several weeks passed, during which, according to the account of Professor Davis,² “the patient continued to enjoy a tolerable state of a somewhat broken health.” Portions of the foetus were discharged by stool, and at last peritoneal inflammation supervened to an imprudent over exertion, and proved fatal in four days.

In another case recorded by Dr. Davis, communicated by Dr.

¹ London Medical Journal, vol. viii. part iv.

² Principles and Practice of Obstetric Medicine, page 1072.

Windsor of Manchester, a similar result followed, where the resources of nature were trusted to, the poor woman having dragged on a miserable existence for above two months, when death put a period to her sufferings.

Dr. Denman, after having for nearly half a century advocated the propriety of active interference in those alarming cases, lived to change his opinion, although he had for a considerable time retired from practice, and consequently had no additional experience on which to found a practical dictum. In his Introduction, published in 1801, he thus expresses himself:—"Besides some few others (*viz.* cases where patients were saved by delivery) of which I have been informed, or which are recorded, a case has occurred to my very worthy, able and experienced friend, Dr. Andrew Douglas, in which, though the uterus was ruptured, he turned the child,—the patient recovered, and afterwards had children, at the birth of one of which I was present." He adds, "If no other case had been recorded, this would be of sufficient authority to render it in future the duty of every practitioner to attempt, without delay, to deliver the patient, and bad as her chance certainly would be, to be strenuous in using all the means which art dictates, to extricate her, if possible, from her danger, and to preserve the child."

But in a subsequent publication he expressed himself in the following words:¹—"When the uterus is ruptured at the time of labour, both reason and experience show, that the patient has a better chance of recovering, by resigning the case to the natural efforts of the constitution, than by any operation or interposition of art."

On this opinion, Dr. Dewees has the following comment, in which the author cordially concurs:—"I consider the assertion of Dr. Denman to be in opposition both to 'reason and experience;' to reason, because it would be a natural suggestion, that that woman's chance would be best, from whom many of the causes were removed that would hinder recovery by the delivery of the child, &c.; and to experience, because we have the most unequivocal proofs of recovery upon record where the 'interposition of art was resorted to.'"²

Notwithstanding the cases which occurred to Dr. Sims and Dr. Windsor, the author is strongly impressed with the belief, that where the uterus has burst, nothing but immediate delivery can save the life of the poor woman. Those cases, indeed, suggest to him a very different conclusion from that which Professor Davis has adopted. He says (page 1074), that "we should interfere without loss of time when the circumstances might appear urgent and desperate, and abstain from such interference when the nature of the symptoms might promise a probable successful issue without it."

While the author concurs with Professor Davis, that in urgent cases there should be no delay in completing the delivery, he must

¹ Denman's Introduction to the Practice of Midwifery, page 78.

² Dewees, 6th edition, page 536.

express his dissent from his advice to "abstain from such interference" in any case whatever, for the less alarming the symptoms may be, the greater is the chance of recovery afforded to the patient. What individual would voluntarily submit to the protraction of a miserable existence for some weeks, with eventually a painful and tedious death, as the subjects of Dr. Sims' and Dr. Windsor's inert practice were, according to Dr. Davis's own account, doomed to undergo?

If, from the state of the passages, the infant cannot be drawn forward through the usual apertures, the parietes of the abdomen should be divided.

SECTION II.—SPONTANEOUS RUPTURE OF THE UTERUS DURING LABOUR.

By this term, practitioners have understood the rupture of the uterus from its own violent action, in cases where the progress of the infant is resisted; and it is alleged, that this happens under two different combinations of circumstances, viz. where the uterine contractions are excessively rapid and violent, or where, after the first stage of labour is completed, they are continued for an unusual length of time.

To the term spontaneous rupture, the author objected above forty years ago, because it tends to inculcate an erroneous idea of the nature of the case. (*Vide Select Cases of Midwifery*, page 151.)

But although this term be, strictly speaking, inaccurate, he considers it to be most important to draw the line of distinction between cases of accidental rupture, that is, rupture from external causes, and cases where the laceration is occasioned by the action of the uterus itself; because in these latter cases there are certain premonitory symptoms which indicate to the practitioner the threatening event, by attention to which the danger may be prevented. He therefore feels it necessary to retain the term, under the explanation now given.

Dr. Crantz, in the year 1756, first directed the attention of practitioners to those premonitory symptoms, and considering the state of practical knowledge at that time, it is not wonderful that his enumeration of the symptoms is in some respects imperfect.¹ His expressions are, "When a woman is threatened, the labour being laborious, with rupture of the uterus, the belly is very prominent and tight, the vagina lengthened, and the orifice of the uterus very high, the pains are strong, leave little interval, and do not advance the delivery."

Dr. Andrew Douglas, of London, in recording an interesting case of rupture of the uterus² (that of Mrs. Manning), described more accurately the premonitory symptoms. In reference to Dr.

¹ *Vide* Crantz's Memoir in Puzos *Tracte des Accouchemens*, page 401.

² *Observations on the Rupture of the Gravid Uterus.* By Andrew Douglas, M. D. London, 1789, page 96.

Douglas's observations, the author ventured, in 1795, to allege (Select Cases of Midwifery, page 152), that they were not sufficiently precise to direct the appropriate practice, and that the following circumstances more clearly point out the threatening accident.

“First, The liquor amnii is prematurely discharged. *Secondly,* The os uteri remains remarkably rigid. *Thirdly,* The uterine contractions are very violent and frequent. And, *lastly,* the patient complains of a most excruciating pain in some part of the uterus during the interval between every labour throes. This pain differs from that often felt in the lumbar region in the second stage of labour, in being peculiarly agonising.”

A few months after these Observations were published, a case of laborious labour, already referred to (page 48), occurred in the Edinburgh General Lying-in Hospital, where rupture of the uterus took place without the previous discharge of the liquor amnii. But the circumstances were so peculiar as to render the case perhaps a solitary exception to the general rule. In the early part of the labour, there was a discharge of watery fluid per vaginam, followed by such violent and rapid contractions of the uterus, that, considering the extreme deformity of the pelvis, the author was impressed with the dread of rupture. This he stated in the presence of above forty witnesses, and within a quarter of an hour the accident actually happened. It was found that the membranes of the ovum had continued entire, a circumstance which produced different phenomena from those usually met with in cases of actual rupture.

The prominence and tension of the abdomen in those cases alluded to by Crantz, are the effects of the violent degree of contraction of the uterus; and the agonising pain felt in one part of the uterus, during the short intervals between the labour throes, seems to be owing to some of the uterine fibres remaining contracted, after the others have become relaxed.

In women who have had a large family, a similar pain, though in a much less degree, occasionally occurs, and it never fails to excite a little anxiety in the mind of the author. It appears to be owing to the same cause, viz. irregular contraction of the uterine fibres, but being unaccompanied with the two important circumstances of violent and rapid labour throes, and resistance to the progress of the infant, it does not portend the same danger. It is sometimes relieved by firm compression of the abdomen, by means of a roller.

Several of the most respectable practitioners have, in strong language, asserted, that there are no symptoms indicating the probable rupture of the uterus, during labour, from its own inordinate action. Thus Mons. Baudelocque, in reference to the opinion of Dr. Crantz, expresses himself as follows:—*“Mais ces symptomes sont trop incertains pour que nous puissions les prendre pour règle. La rupture de la matrice a eu lieu nombre de fois sans être précédée d'aucun d'eux, et ne s'est pas faite en d'autres cas, où leur réunion sembloit annoncer qu'elle étoit inévitable. En les prenant*

pour guides, souvent on empieteroit sur les droits de la nature, on entraverait sa marche en opérant un accouchement qu'elle auroit pu terminer sans inconveniens, ou avec beaucoup moins que nous ne l'eussions fait nous mêmes; et l'on ne pourroit se flatter, en aucun cas, d'avoir prévenu la rupture dont il s'agit." Par. 2287.

Dr. Ramsbotham says, "rupture of the uterus always takes place suddenly, and generally without any previous warning."¹

Dr. Dewees says (page 541), after detailing Crantz's opinion, "Did the signs just detailed portend a rupture of the uterus, every laborious labour would be threatened with one; every symptom enumerated above is almost the necessary effect of the tonic action of the uterus after the evacuation of the waters; yet, fortunately for suffering woman, this accident is of comparatively rare occurrence."

On the other hand, both Professor Burns and Professor Davis² admit, that there are premonitory symptoms which mark the probability of this alarming casualty."

This discrepancy of opinion upon a practical subject of so much importance, can only be explained upon the supposition that cases of accidental have been confounded with those of spontaneous rupture of the uterus.

It is also to be noticed, that the symptoms indicating the spontaneous rupture of the uterus, are more distinctly marked than those which follow the accidental rupture. Thus, in addition to the signs of rupture enumerated (page 108), the patient screams out that something has given way within her, and expresses her conviction that the rent must have been heard by the attendants, and the labour throes, which had been unremitting, suddenly cease, or become extremely trifling or irregular, a bloody discharge commonly, though not always, issues from the vagina, and the advancing part of the infant recedes, though sometimes the pain which ruptures the uterus partially protrudes the infant.

As this untoward accident has happened under various combinations of circumstances, viz. during the first stage of labour, where the os uteri has been most unyielding, and during the second stage, where the infant was in a wrong position, or where there was disproportion between it and the apertures, from the several obstacles already enumerated, it is not surprising that the cause of rupture has been explained on different and contradictory principles by practitioners of high respectability.

There can be no doubt, that in all cases of spontaneous rupture, two agents concur in producing that effect, viz. violent or long continued uterine contractions, and unusual resistance, and the probability is, that the uterus, under such circumstances, bursts at its own weakest part. If the substance of the uterus were injured by its pressure against the promontory of the sacrum, or against the

¹ Ramsbotham, part i. page 378.

² Professor Burns, page 492.—Professor Davis, page 1069.

crista pubis, the line of laceration should correspond with those resisting points. But in the case recorded, page 48 of this volume, while there must have been most injurious pressure, both from the projecting sacrum and the crista pubis, the laceration was to the left side of the uterus, and in a longitudinal direction, too, where there was no pressure whatever. In many other cases, it has been found that the laceration was not in the direction of the resisting part.

When the rupture has supervened to long continued labour, perhaps the texture of the uterus is altered by the injurious pressure, and this seems to have happened in several of the fatal cases which occurred in the Lying-in Hospital of Dublin, where, as Dr. Collins has remarked, there had been great mismanagement previous to the poor woman having been sent to the hospital.

For the prevention of spontaneous rupture, ample bleeding, followed by the use of opiates, and the removal of any of the obstacles to the progress of the infant, and, on some occasions, immediate or speedy delivery have been recommended.¹

Many years ago, the author adopted a simpler and safer mode of practice, viz. suspending the uterine contractions by exciting alarm in the mind of the patient, and he can talk confidently of the efficacy of this plan. Of course, after the labour throes have been arrested, his endeavours have always been directed to the means of facilitating the future progress of the delivery.

¹ Professor Davis, page 1071. Dr. Andrew Douglas's Observations, page 97.

APPENDIX.

No. I.

CASES OF CICATRIX OF THE VAGINA IN CONSEQUENCE OF LABOURIOUS LABOUR.

I. In the year 1794, the late Dr. Skene, of Aberdeen, requested the opinion of the author's father on the case of a lady to whom Dr. Skene had been called six weeks after her delivery. From the history it appeared, that after long-continued and severe sufferings, a putrid infant had been expelled by the natural efforts, and that inflammation and suppuration of the passages had followed. Dr. Skene found a callous projection in the perinæum preventing the patient from sitting, and a thick indurated cicatrix about the middle of the vagina, so much contracting that canal, that he could with difficulty pass the point of his fore finger into it.

By the repeated application of leeches, and by the use of mercurial frictions, the callosity of the perinæum was removed, but the indurated contraction of the vagina continued; notwithstanding which, the patient, in the course of a few months, again became pregnant. This circumstance led to a second consultation, viz. as to the mode of treatment to be adopted in regard to her delivery. The advice was, to draw blood from the arm to the extent of thirty or forty ounces after the first stage of labour should be completed, and to give time. The practice proved so successful that the lady was safely delivered of a living child, and Dr. Skene, in communicating the event, wrote that he had never left a lying-in patient with more heartfelt satisfaction than on that occasion.

II. Twelve years after that period, the author witnessed a case of a similar nature, in which, however, the result was very different. The poor woman had had her first child six years before in the town of Ayr, and had been allowed to be some days in labour. At last a putrid infant had been expelled, followed by violent and extensive inflammation of the passages. After a lapse of above five years she again conceived, and when in labour was attended by Dr. Murdoch, formerly one of the author's private pupils, and one or two students. An attempt to deliver by the crochet having been unsuccessful, the author's aid was requested. He found a callous cicatrix, of the thickness of one's finger, extending from one tuberosity of the ischium to the other, and so narrowing the outlet of the pelvis that a half-crown piece could not have been introduced. On dividing this with a scalpel the delivery was very rapidly accomplished, but it was too late to save the poor woman.

The two following cases occurred in the practice of Dr. John

Moir, Assistant Physician to the Edinburgh General Lying-in Hospital.

III. Mrs. Lawson, about twenty-eight years of age, lay in some time ago, of her first child, in Glasgow, and, according to her own account, had a very severe and tedious time, and recovered after a hairbreadth escape. She became in labour of her second child on the 30th March, 1835, and was attended by Mr. Ritchie, one of the pupils of the Edinburgh General Lying-in Hospital.

At first the labour went on favourably, but when the head of the infant came in contact with the perinæum, it remained immovably wedged for above two hours, notwithstanding copious venesection, and the recurrence of strong uterine contractions every three minutes.

Dr. John Moir's assistance was then requested, and he ascertained that the impediment was occasioned by a strong callous band about the thickness of one's little finger, stretching across the posterior part of the vagina, situated from about three quarters of an inch to an inch above the external parts. This was evidently a cicatrix, occasioned by the effects of the former delivery. On cutting through this callosity during the interval between two pains, the patient was in a very few minutes delivered of a living infant. She experienced no pain from the operation, and the scalpel was scarcely tinged with blood. In extracting the placenta, it was found that the ends of the divided cicatrix were at least two inches asunder. The patient recovered without any untoward symptom.

IV. Mrs. Alexander, apparently thirty years of age, became in labour of her first child on Wednesday, 11th May, 1835, about six o'clock, P. M., and continued to have uterine contractions, without interruption, till Saturday morning, May 14th, when, about seven o'clock, A. M., the head of the infant was born. Nearly six hours were allowed to elapse before the shoulders were expelled, and the birth of a dead infant was completed.

For many weeks she continued in a very alarming state, evidently from inflammation and sloughing of the passages, and from a short time after delivery she had an involuntary discharge of urine.

When Dr. Moir first saw this patient, three months after her delivery, the symptoms were incontinence of urine, great tenderness from excoriation of the parts, and such a sense of pressure and bearing down, on attempting any exertion in the erect posture, that she was obliged to remain almost constantly in bed.

At Dr. Moir's request the author visited her, and on examining the state of the passages he found that, within an inch of the external orifice the vagina was so contracted, in consequence of a thick callous cicatrix, in the form of a ring, that the finger could not be passed through it. This impediment rendered it impossible to ascertain either the seat or the extent of the opening into the bladder.

The use of sponge-tents and suitable means for relieving the external excoriations were recommended. As her general health

gradually became much improved she neglected those means, and it was at last discovered that she was again in the family way,—a fact which explained the alleviation of the symptoms.

Early on the 8th May, 1836, labour pains having come on, she sent for a midwife, and very unexpectedly, within two hours, was safely delivered of a living infant, without any extraordinary aid.

Ten days after her delivery, Dr. Moir was permitted to examine the state of the vagina, and he had the satisfaction to find every thing natural, excepting a small opening into the neck of the bladder. Notwithstanding this, she could retain her urine for about two hours at a time, and therefore she declined submitting to any means for the obliteration of this opening. She was visited upon the 10th day of June, when she appeared in good general health, and was suckling a thriving baby.

No. II.

COPY OF A LETTER PROPOSING A SUBSTITUTE FOR THE CÆSAREAN OPERATION.

The subjoined letter, addressed to the author in 1805, relates to a proposed substitute for the cæsarean operation, which is so similar to that lately suggested by Professor Davis, of the London University, that it has been deemed necessary to publish a fac-simile in order to establish its authenticity.¹

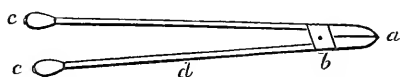
Sir,—In those cases of difficult parturition, where the dimensions of the pelvis are such as in the famous case where Dr. Osborn delivered (El. Sherwood), or where they are in general under three inches by one and a half in the two diameters, we are of opinion that matters might still be terminated with little comparative danger to the mother, and in every case without having recourse to that horrible and fatal operation, *the cæsarean*. The practice we would propose in some degree resembles that with Dr. Lyon's forceps, in diminishing the basis of the skull to a still greater degree after all that has been detached by the crotchet has been extracted; but the forceps of Dr. Lyon is faulty in this, that you can only diminish the bones by twisting and pressing them in their jagged state against the parts of the mother, and thereby producing great and often irreparable injury to the mother, before you can, in any considerable degree, diminish the basis of the skull or those bones attached to it.

The method we propose makes no pressure on any part of the mother, as its fulcrum is within itself. It is simply this:—To have an instrument constructed resembling the common perforator in its general form, only being made stronger, and of highly tempered steel, and having an edge on the inner side, of that thick and channeled kind that we find in the copper smith's scissors, and

¹ It was considered unnecessary to give the fac-simile in the American edition.—*Ed. Lib.*

being carefully rounded on the outer side, where the perforator has the angular and rhomboidal edges. It will readily occur that an advantage would result from combining the perforator and this instrument in one, but we are of opinion that the danger and disadvantages attending the use of such an instrument would more than counterbalance the advantage of having one instrument in place of two. The danger is, that in using this scissors the sharp angular edges of the perforator would injure the parts of the mother; and several disadvantages would attend its introduction and use from having a sharp point, which would be dangerous and troublesome in guarding; besides, if a firm piece of bone were fixed between these slender points, they might bend in cutting it asunder.

The general form of the instrument might resemble the following scrawl, for I am no drawer.



The length of the whole instrument might be twelve and a half inches, and the fulcrum b be so situated that ba shall be equal to two inches, and cb of course equal to ten and a half. The ends of the handles should be made of an oval figure, so that we may either compress them by the finger and thumb, or hold them in the palm of the hand, according to the force required to divide the bone between their edges. That the instrument may be light and strong at the same time, the handles should be broad in the plane of the instrument (as represented), and thin in the other direction. The point should always be of that rounded and obtuse form represented.

The method of using the instrument is so simple as to require no illustration; its sole object being gradually and cautiously to clip away the bones of the basis of the cranium, or any other that may be transversely situated above the brim of a deformed pelvis.

Having had the good fortune of lately being one of your pupils, and thereby knowing your professional abilities and zeal, I have ventured to submit this speculation to you. If it is really a dream and unworthy of the light, condemn it to that oblivion it deserves; but if it can be realised make what use of it you please, give it to the editor of the *Ed. M. Journal*, &c.

With sentiments of the highest respect for your professional abilities, I am, sir, your most obedient and humble servant,

W. B.

Rose street, Feb. 17, 1805.

No. III.

CASE OF CONVULSION REFERRED TO, p. 98.

First case, originally published in Dr. Duncan's Medical Annals, vol. v. p. 313.—Mrs. M., aged twenty-five, of a melan-

cholic temperament, fully seven months advanced in her first pregnancy, having been seized with violent convulsions, at eight o'clock, A. M., of December 24th, 1799, was visited by Dr. Fitzgerald, of Virginia, then my annual pupil, and myself, about an hour after the first attack. We found her nearly insensible, with an oppressed slow pulse, the pupils of the eyes greatly dilated, the lower extremities much swelled from anasarca, and without any symptoms whatever of approaching labour. On enquiry, we learned, that her limbs had been swelled for above a fortnight, and that on the day preceding our visit she had complained much of headache. During the night she had been restless and sick. Her bowels had for some weeks been rather constipated.

A vein in the arm was immediately opened, and a sufficient plug forced into the mouth. After six or eight ounces of blood had been discharged, a violent fit (the third from the beginning) came on, and continued for several minutes; after which, it was perceived that the superior extremities had become so swelled that the blood almost ceased to flow. Several leeches were now applied to the temple, and the bowels were freely opened by a clyster. Above an hour elapsed without any return of the convulsions, during which time a considerable quantity of blood was discharged from the temple. But on the recurrence of the fit, the anasarca was extended to the face, which swelled it prodigiously, and completely closed the bites of the leeches. The whole head was now shaved, and at three o'clock, P. M., was covered by a large blister.

From this period the fits recurred at short intervals, and during the time of their remission, which scarcely ever exceeded half an hour, great restlessness and stertorous breathing took place, together with that appearance of the countenance which occurs in apoplexy. No change happened till about three o'clock, A. M., of the 25th, when the blister began to discharge freely, and the restlessness and sterto ceased. The patient swallowed now, from time to time, a little gruel, and no fit recurred for four or five hours.

When Dr. Fitzgerald and I visited her, early in the morning of the 25th, we found her somewhat more sensible to external impressions; but the pupils of the eyes were still greatly dilated, the pulse slow, irregular, and oppressed, and the fits were again beginning to recur at shorter intervals. A fresh blister was applied to the head, and ten drops of the saturated tincture of digitalis were directed to be given every half hour, till a copious discharge of urine should be produced.

Although the fits recurred occasionally at irregular intervals during the whole forenoon, the medicine was taken with much punctuality for eight hours, when great sickness and vomiting were excited, and a prodigious quantity of urine was passed involuntarily. From this time the fits entirely ceased, the œdematous swelling of the face and upper extremities subsided, and the patient began to be able to take weak nourishment, and to answer any questions that were put to her. Pain in her head, and inability to move her right thigh, leg, and foot, were the only circumstances

she complained of. Four ounces of the camphorated julep (of the strength of ʒij of camphor to the pound) were ordered to be given every four hours while awake. During the night she repeatedly desired to be raised to make water, and had occasionally very sound sleep.

On the morning of the 26th she had a powerful dose of jalap and calomel, which produced, in the course of the day, two or three copious discharges by stool.

She passed the following day without any untoward symptoms; but, on the 28th, the pain in the head appeared to be aggravated, although a regular discharge, by means of strong epispastic ointment, had been kept up. The swelling in the lower extremities also seemed increased, and the pulse was rather oppressed, and the eyes were dull. The use of the camphor was laid aside, and the tincture of digitalis was directed to be given in the dose of ten drops every hour. This was continued till evening, by which time repeated copious discharges of urine had taken place; the pain in the head had abated, and the swelling of the lower extremities had decreased.

For a few days she had regularly a dose of camphor at bedtime, and her convalescence went on progressively.

At the end of a fortnight symptoms of labour came on, and she was delivered of a male child that had been dead apparently for a considerable time.

Her lying-in was not attended by any uncommon symptom; but for several weeks after delivery she complained much of occasional vertigo and pain in the head. A course of bark and valerian, with country air and exercise were prescribed; and, in the month of August last (1800), the patient was in her ordinary state of health.

Second Case of Convulsions during Pregnancy.—Mrs. A. B., in the twenty-first year of her age, supposed to be eight months pregnant of her first child, awoke at five o'clock, A. M., of October 31st, 1832, complaining of violent headache, and on the supposition that it was rheumatic, had recourse to some external warm application. Within four hours, on getting out of bed for some purpose, she fell down in a state of insensibility, and on being taken up, it was observed that there had been a considerable discharge of water. It had been remarked by the attendants for several days before the attack, that although apparently in her ordinary state of health, her face and the upper parts of her person were swollen in the morning.

When the author saw this patient, within an hour after the first attack, he found her quite incoherent and restless, with the face pallid, the surface cold, and the pulse feeble, fluttering, and so frequent that it could not be numbered. Before he could learn any thing of the history of the case a strong convulsion supervened, attended with bloody frothing at the mouth.

Surgical aid was instantly obtained, and a vein of the right arm was opened with a large orifice, but the blood only flowed in drops till another convulsion came on, when a few ounces were dis-

charged. A vein in the left arm was next opened, with the same result, but as the convulsions recurred very frequently, the discharge of about thirty ounces of blood from both arms was procured. In the meanwhile a large sinapism was applied to the nape of the neck, and kept on for about an hour.

As the convulsions continued to recur, although the pulse remained as feeble as ever, and the veins could not be made to rise, the scarificator and cupping glasses were applied to the left temple (it having been found impracticable to bleed the jugular vein), and a few ounces of blood were in this way discharged.

The head was then shaved, and the scalp was completely covered with a sinapism, and this was not removed for at least three hours and a half. Two minims of croton oil were with difficulty swallowed, though diluted with no more than two drams of syrup; but in ten minutes a violent fit of retching occurred, by which some mouthfuls of tough phlegm were ejected, and once or twice afterwards a small quantity of fluid, tinged with bile, was vomited.

For three hours from this date no convulsions recurred, and there was evidently a partial return of sensibility, though without any change in the state of the surface or of the pulse, the former being cold and the latter indistinct.

The convulsions now returned, and in the short interval between them the breathing was hurried, the inspirations being from thirty-six to forty in a minute, and the air expelled from the lungs was perceptibly cold. During those short intervals between the fits, there was sometimes distressed groaning, and sometimes violent grinding of the teeth.

Thus the symptoms proceeded till five p. m., when, during a strong convulsion, the uterus was found to contract. It had been previously ascertained that the os tinæ was still closed. Although from this period the convulsions recurred almost every quarter of an hour, the uterus remained quiescent.

About seven, p. m., however, uterine contractions came on, sometimes accompanied with convulsions, and sometimes independent of them, and the labour proceeded so rapidly that the patient was delivered at eight, p. m. There were three turns of the navel string round the neck of the infant, which was a male, and was still-born, and could not be recovered, although there was at first pulsation in the cord, but no action of the heart could be perceived. The placenta readily followed, and a free discharge of blood from the uterus was encouraged by the application of a bottle of hot water to the lower part of the belly.

The only change which followed delivery for some hours, was an increased heat of the surface, so that, by pressure, the superficial veins could be made to swell. But the pulse was equally imperceptible, the breathing frequent and laborious, and the convulsions were still followed by distressing loud groaning.

No evacuation, either from the bowels or from the bladder, had taken place.

About four, A. M., of the first of November, the pulse, at the wrists, became very perceptible, and a profuse sweat over the whole surface broke out, with flushing of the face, but there was no mitigation of the symptoms, and the pulse gradually became more feeble, the moaning was almost incessant, and the convulsions recurred every quarter of an hour.

The phenomena of the fits now varied considerably. Sometimes the whole muscles which move the body and limbs were convulsed, sometimes only the lower or upper extremities. On other occasions, the respiratory muscles, including those of the face, were alone affected. It also repeatedly happened that the right arm and the left leg were the only convulsed parts, excepting the muscles of the lower jaw, which were affected during every fit, and often during the intervals. A copious flow of saliva accompanied many of the fits, and several hours elapsed before there was any marked dilatation of the pupils.

At ten, A. M., the symptoms were unchanged, pulse 150, breathing 42; and it was found that the abdomen was much distended with flatus. A fetid enema was now administered, by which a copious alvine discharge was procured.

From this period the convulsions ceased, the breathing became gradually less frequent, the groaning decreasing in proportion, occasional discharges of flatus from the bowels were heard, the pulse could be numbered, and the patient seemed to be in a profound natural sleep. Occasionally, from the movements of her lips, it was supposed that she required drink, and a little diluted spir. æther. nitrosi was given, which was swallowed, though with very great difficulty.

At half past one, A. M., twelve grains of calomel, mixed with sugar, were put into the mouth.

Little variation in the symptoms was observed till between seven and eight o'clock, P. M., when there was a profuse discharge of urine. This was followed by a very copious, loose, and fetid evacuation from the bowels, with such manifest relief, that a teaspoonful of the spt. æther. nitrosi, properly diluted, was swallowed with comparative ease. There being much heat of the surface, with flushed face, and turgid superficial veins, the upper parts of the person were now sponged with tepid water and vinegar, combined with a small proportion of brandy, and this operation was followed by natural sleep, which continued for several hours.

About six, A. M., of the 2d, in consequence of considerable restlessness, the state of the bladder was examined, and about a quart of urine was drawn off by the catheter, and a large dose of camphor was given, after which the patient relapsed into a quiet sleep.

When visited at ten, A. M., the pulse was found to be distinct though frequent, the heat of the skin and the breathing natural, the sensibility so much improved that the tongue was put out when required, and the power of deglutition was so much restored that the drinks administered were readily swallowed. An attempt had been made in the course of the morning to give some panada, but it seemed to be nauseated.

The fetid enema was now repeated, and the camphor was directed to be given every two hours while awake. Occasional doses of a solution of the carbonate of potass. with the *spt. æther. nitros.* and small proportions of weak chicken broth were advised.

Under this treatment the convalescence progressed steadily though slowly.

As the tongue had been bit through on the right side, indistinctness of articulation was at first attributed to the inflammation and ulceration which followed, but after the separation of the slough, and the healing of the part, slowness and difficulty of articulation continued, and there was an evident impaired state of memory and of vision.

Within about a fortnight from this date the bodily health began to improve, and the lady was at the end of six weeks enabled to take a daily airing in her carriage.

Several weeks, however, elapsed before she could articulate readily, and a still longer time before she could read even large print. It appeared that her memory improved quicker than her vision, and therefore, for the purpose of accelerating the restoration of that important sense, a course of electricity, in the form of the electric aura, was recommended, and it was productive of the best result.

This lady left Edinburgh towards the latter end of March, in perfect health, having menstruated regularly three different times. She has since that time been safely delivered of two children.

No. IV.

When Dr. Evory Kennedy's work on Obstetric Auscultation appeared, the author requested two of his old pupils, now engaged in extensive practice, Dr. Sidey and Dr. Moir, to attend particularly to the action of the foetal heart previous to breathing.

On the 26th of October (1836), he sent a note to each of those gentlemen, requesting to know the result of their investigation on this subject, and the following are the answers which he received :

2, Heriot Row, Edinburgh, 27th October, 1836.

Dear Sir,—In answer to your note of last night, in regard to the action of the foetal heart before breathing is established, I beg to state, that since you directed my attention particularly to the subject, I have had an opportunity of ascertaining, in eight cases, that the action of the heart is only 60, or under it, in a minute, before the act of respiration is established.

In four of the eight cases I had to deliver the patient by the operation of turning. During the absence of the labour pains I had an opportunity of deliberately counting the pulsations of the cord, and of contrasting them with those of the iliac arteries of the mother, which I felt distinctly through the parietes of the uterus.

I am, yours very truly,

CHARLES SIDEY.

5, George street, 26th October, 1836.

My dear sir,—In reply to your letter of this date, I beg leave to say, that, till the publication of Dr. Evory Kennedy's book on Obstetrical Auscultation, I considered that the slow action of the fœtal heart, in those cases where the infant does not breathe upon birth though the circulation continues, had been a fact universally acknowledged by the practical part of the profession.

On reading Dr. Kennedy's publication, my attention was very particularly directed to this subject; and I can with great truth assure you, that my observations since that time have invariably confirmed the fact, that the pulsations of the heart are only about 60 in those cases, as mentioned in my former communication to you, and recorded in the first part of your work.

I am, dear sir, yours very truly,

JOHN MOIR.

Dr. Hamilton.

2, Heriot Row, Edinburgh, October 29, 1836.

My dear sir,—Since I wrote to you on the 27th, I have had two opportunities of ascertaining the action of the fœtal heart previous to the commencement of breathing. The one occurred last night and the other this morning.

In the former case, I felt the cord of the infant round its neck whenever the head filled the pelvis, and pressing my finger upon it, I repeatedly counted the pulsations, and I found them to be rather under 60 in the minute. The infant whom I assisted into the world this morning did not breathe for some little time, but the arteries of the navel string beat distinctly. The number of pulsations in the minute varied from fifty-six to sixty.

I ever am, my dear sir, yours truly,

CHARLES SIDEY.

THE END.

STATE OF MEDICINE

IN

FRANCE, ENGLAND, AND GERMANY.

Dunglison's American Medical Library.

OBSERVATIONS
ON THE
COMPARATIVE STATE OF MEDICINE

IN
FRANCE, ENGLAND, AND GERMANY,

DURING A JOURNEY INTO THESE COUNTRIES IN THE YEAR 1835.

BY DR. ADOLPH MUEHRY,
PRACTISING PHYSICIAN AND SURGEON IN HANOVER.

TRANSLATED FROM THE GERMAN
BY EDWARD G. DAVIS, M. D.,
OF PHILADELPHIA.

PHILADELPHIA:
PUBLISHED BY A. WALDIE, NO. 46, CARPENTER STREET.
1838.

CONTENTS.

	PAGE
PREFACE.	15
CHAPTER I.	
Topography of Paris and London,	17
CHAPTER II.	
Doctrine of Inflammation in France and England,	31
CHAPTER III.	
French Medicine,	36
CHAPTER IV.	
English Medicine,	58
CHAPTER V.	
French Surgery and Ophthalmology,	78
CHAPTER VI.	
English Surgery and Ophthalmology,	92
CHAPTER VII.	
Changes in the Condition of Medicine in France,	103
CHAPTER VIII.	
Condition of Medicine in England, and its Reform,	105
CHAPTER IX.	
A Glance at Germany,	118
CHAPTER X.	
Some farther Comparisons,	125

PREFACE.

In the following work, founded on a residence of several months in Paris and London, a journey through England to Dublin, and a visit to the north of Germany in the year 1835, it is not my intention to present a complete account of the tour, or of the hospitals and other institutions of the cities visited. Enough of this kind of information is already to be found recorded by those who have preceded me: in the travels of Frank, for example, in 1805; of Andree, in 1810; of Haindorf, in 1815; of Wagner, in 1825; of Otto, in the same year; lastly and especially, of W. Horn, in 1832. Neither do I design to reproduce what may be found in more systematic treatises—as in Casper's "Characteristics of French Medicine," and "Contributions to Medical Statistics," which have appeared in 1822, 1825, and 1835; in Von Ammon's "Parallel of French and German Medicine," in 1823; in H. Kopp's "Medical Observations" for 1825; in Philip von Walther's "Remarks of a Traveller upon London;" in Graefe and Walther's *Journal* for 1832; in Dieffenbach's "Remarks in and upon Paris;" in Casper's weekly publication for 1835 and 1836. Nor, again, do I intend taking any notice of current medical intelligence, new remedies or instruments, remarkable cases, &c.; since, by means of translations, and of journals expressly devoted to that end, the reading community of Germany are constantly and promptly supplied with news of this description. My purpose is, besides presenting a few gleanings of recent facts of interest, to give such a compendious view of the state of national science in these different countries, as personal observation, combined with the publications of the day and with the history of the past, have enabled me to form. I have endeavoured to do this in such a manner, as not only to recount

single impressions made by particular objects, but to convey the combined effect of several—compounded, to use a professional simile, so as to produce a common result.

This work, therefore, is the product of my humble efforts to obtain a just notion of the state of medicine in the different countries I have visited; and my hope is, that it may afford some aid to future travellers, and contribute to a just estimate of the comparative condition of science in the countries alluded to. My views will be found to be based upon facts, and these not lightly gathered either from hearsay or from books. Perhaps I may be excused for alluding to the difficulty of the task, and for confessing that I throw this essay before the public with some timidity. To all those whose attentions and kind offices have aided me in accomplishing the objects of my journey, I take this opportunity of renewing my expressions of regard and gratitude.

I will only add that a second visit to London, during the month of May of the present year, has afforded me an opportunity of visiting some new objects of interest, and of correcting my impressions of those already observed.

Hanover, July, 1836.

STATE OF MEDICINE

IN

FRANCE, ENGLAND, &c.

CHAPTER I.

TOPOGRAPHY OF PARIS AND LONDON.

PARIS.—Quartier Latin—Ecole de médecine—Lectures and professors—Hospitals and hospices—Clinics—Students—Concours—Foreign physicians.

LONDON.—Hospital—Schools—Management of these—Teachers—Pupils—Regulations for the examinations of surgeons and general practitioners in England, and curriculum of the medical faculty at Edinburgh—Climate and mode of life—Traveling physicians.

PARIS.

Paris is, as is commonly said, all France. This accounts for the fact of its immense population. This centralisation of the whole country in the capital is true also of medicine. Strasburg and Montpellier are the other distinguished medical schools, but the rivalry between the latter and Paris has long since ceased. The capital has the advantage both in point of resources and of activity.

Paris is divided from east to west by the river Seine. On the north side lie the theatres, the boulevards, the Louvre, the Tuilleries, the Champs Elysées, the Palais Royal. In the midst of the southern half is situated an old, somewhat narrow district, which, as being the resort of persons pursuing learned occupations, has long been styled "Pais," or "Quartier Latin." Here is the University of Paris, here are the Sorbonne, the Ecole de Droit, the Ecole Polytechnique, most of the "Colleges," and the Ecole de Médecine. On the left side is the still beautiful Quartier St. Germain; on the right is a lively but dirty district of mechanics and tradesmen; on the south is the Luxembourg, with its single large garden; and under the ground run the old catacombs, labyrinthic passages formed by nature, now filled with skulls and bones.

The school of medicine is in the rue de l'Ecole de Médecine, and in this street are also the Ecole Pratique, and the Hôpital de l'Ecole. Here are found medical booksellers, instrument makers, skeleton makers, and a medical reading room. The hospitals, however, excepting that just named, are for the most part at a distance and far apart.

The faculty of medicine of Paris consists of a dean (now Orfila) and twenty-five professors. The number of agregés is twenty-four; that of the students in 1836 was two thousand.

The school of medicine is a large building, containing a museum, a library, and a lecture room, capable of containing more than one thousand five hundred persons, and soon to be enlarged. Each professor lectures from twice to three times a week, and receives an income of ten thousand francs. The year is divided into two semesters. No private individual can teach or lecture without permission, which, however, is easily granted. The number of private courses is over sixty.

The lectures and professors are :—

Anatomy, Cruveilhier, (Physician to Salpêtrière, now Professor of Pathological Anatomy); *Physiology*, Bérard; *Medical Chemistry*, Orfila; *Medical Physics*, Pelletan; *Botany*, Richard; *Pharmacy*, Déjeux; *Hygiene*, Desgenettes; *Practical Medicine*, Andral (Physician to la Charité), Duméril; *Surgery*, Marjolin (Hôpital Beaujon), Gerdy (Hôpital St. Louis); *Operations and Bandages*, Richerand (Hôpital St. Louis); *Pathology and Therapeutics*, Broussais (of Vâl de Grâce Military Hospital); *Legal Medicine*, Adelon; *Obstetrics*, Moreau (Maternité Hospital); *Medical Clinics*, Chomel (Hôtel-Dieu), Rostan (Hôpital de l'Ecole), Fouquier (Charité), Bouillaud (Charité); *Surgical Clinics*, Jules Cloquet (Hôpital de l'Ecole), Velpeau (Charité), Roux (Hôtel-Dieu), Sanson (Hôtel-Dieu); *Obstetric Clinics*, Paul Dubois (Hôpital de l'Ecole).

The lectures commence at 10 o'clock, and continue in the same lecture room in regular succession till 5. Strangers are admitted gratuitously and without ticket.

With the school are connected two additional structures—one, the Ecole Pratique, situated opposite in the same street, containing several small lecture rooms, in which private courses are given, and four dissecting rooms; the other is Clamart, near the Jardin des Plantes, intended for dissection merely, consisting of four large halls, in each of which are about twelve tables, and which together accommodate two hundred and fifty students. Every one can take part in the dissection, but each subject supplies five students, and costs about six francs. All unclaimed bodies are brought out of the hospitals to one of the two places.

The hospitals are :—

1. Hôtel-Dieu, 1000 beds (Place Nôtre Dame). Here are received, as in the other hospitals, with the exception of the five to be last named, all the sick, excepting the insane, children, incurable, syphilitic, pregnant, and those suffering from chronic disease.

2. Hôpital de la Pitié, (Rue Copeau,) 600 beds.

3. Hôpital de la Charité, (Rue des S. S. Pères,) 300 beds.
4. Hôpital Cochin, (Rue du Faubourg St. Jacques,) 200 beds.
5. Hôpital St. Antoine, (Rue du Faubourg St. Antoine,) 250 beds.
6. Hôpital Necker, (Rue de Sévres,) 140 beds ; with a ward for the application of lithotrity, attended by Civiale.
7. Hôpital Beaujon, (Rue du Faubourg du Roule,) 180 beds.
8. Hôpital des Enfans Malades, (Rue de Sévres,) 550 beds, for children of both sexes, from two to fifteen years of age.
9. Hôpital St. Louis, (Rue de l'Hôpital St. Louis,) 700 beds, especially devoted to cutaneous diseases, ulcers, and scrofula. Here are medical baths, including steam and sulphur baths.
10. Hôpital des Vénériens, (called Hôpital aux Capucins, or Hôpital du Midi,) Rue des Capucins, 650 beds.
11. Maison Royale de Santé, (Rue du Faubourg St. Denis,) 175 beds, devoted to the sick and wounded, who are here attended on payment of three to six francs per day.
12. Maison d'Accouchement, (or Maternité,) Rue de la Bourbe, 350 beds.

The ten hospices or asylums are :—

1. Hospice des Enfans Trouvés, (de l'allaitement,) Rue d'Enfer, 258 beds ; for the reception, nursing, and charge of foundlings.
- 2 and 3. Two hospices for old age ; the Salpêtrière for women, 5100 beds ; Bicêtre for men, 3200 beds.
- 4 and 5. Two hospices for incurables.
One for women and children, 525 beds, (Rue de Sévres.)
One for men, 455 beds, (Rue St. Martin.)
6. Hospice Larochehoucauld, 200 beds : asylum for those employed in the hospices.
7. Hospice des Orphelins, (Rue St. Antoine,) 750 beds—half for boys, half for girls—who are maintained till they grow up.
8. Institution of St. Périne, 175 beds : for the sick and weak of both sexes, who pay board.
9. Hospice des Ménages, (Rue de la Chaise,) 670 beds : for needy married persons above seventy, widows and widowers of sixty years.
10. Hospice St. Michel, 12 beds : for persons of seventy years of age.

The hospitals and hospices of Paris contain in all about 15000 beds. In this number are not included the four military hospitals, the Insane Hospital at Charenton, near Paris, the Institute for the Blind, &c. Of these institutions no one lies on the river except the Hôtel-Dieu, which is reckoned the most unhealthy ; whether for this reason is undetermined. (In London, also, there is no hospital on the Thames, with the exception of a marine asylum on board a vessel in the stream.)

All the above named institutions in Paris are under the direction of the Administration générale des Hôpitaux et Hospices de Paris, with a separate Bureau d'Admission aux Hospices. There are also a large number of benevolent institutions, which are not under

the same direction. The mean annual number of patients received in seven years, from 1819 to 1825, amounted to 47,166, or one to eighteen of the population of the city. The mean stay of a patient in the hospitals is thirty-five days; the mortality about one to 8.37. The income and expense amounted in 1833 to 10,186,388 francs.

The most useful institutions to the physician visiting Paris, are Hôtel-Dieu, Charité, the Hôpital de l'Ecole, Hôpital des Enfants, des Vénériens, and St. Louis. By consulting a guide-book, or plan of Paris, the reader can form to himself an idea of their various positions. Besides the four medical clinics of the professors of the university, as that of Chomel in Hôtel-Dieu, of Rostan in the Hôpital de l'Ecole, of Bonillaud and Fonquier in la Charité; besides the surgical clinics of Roux and Sanson in Hôtel-Dieu, Velpeau in La Charité, Jules Cloquet in the Hôpital de l'Ecole, and Blandin in La Pitié; and besides the obstetric clinic of Paul Dubois in the Hôpital de l'Ecole, there are some excellent clinics by physicians and surgeons not attached to the faculty, as by Lisfranc, Louis, and Piorry, in La Pitié. By clinics are meant the exposition and discrimination of the cases, which a physician or surgeon en chef delivers in the lecture room, after his regular round or service. Those who are especially followed during their visits, are Lugol, Bielt, Alibert, Gerdy, in the Hôpital St. Louis, Ricord in the Hôpital des Vénériens, Breschet, Magendie, Recamier, Bally, in Hôtel-Dieu, Civiale in Hôpital Necker, Rayet and Andral in La Charité, Larrey in the Hôpital des Invalids, Broussais in Vâl de Grâce. A service embraces from forty to one hundred and twenty patients. In each service there is also a younger chef de clinique for the aid of the physician or surgeon en chef. The time of the visits is the morning—sometimes as early as six o'clock. The internes, externes, and other pupils, follow the prescriber from bed to bed. The prescriptions and diet are entered in a book, and this is executed with sufficient rapidity. Then follow in the lecture room eloquent, or at least fluent discourses, and once or twice weekly, operations. After this come also the gratuitous consultations for out patients. In this manner the physician or surgeon is employed from two to three hours each morning. The hospitals, which were not originally designed for their present use, are not handsome buildings, but generally large, and the wings not divided into rooms, but traversed by long halls. The rows of beds against the walls, with their long white curtains, the sœurs hospitalières, in the white or black garb of their religious order, acting as nurses, the images of saints in the corners, the stone floors, the order and the stillness, make a peculiar impression.

The Hôpital de l'Ecole has been built and arranged within a few years. It is opposite the school of medicine, and is especially designed for clinical instruction. It has three wards, one for medical patients under Rostan, one for surgical under J. Cloquet, and one for puerperal cases under Dubois. It is especially remarkable, because the clinics in this hospital resemble the German. There is an examination of the student at the bedside, and the obstetric

department has in part supplied a great previous defect, since exercises in touching and practical illustrations are given, which formerly were entirely wanting, Maternité being accessible only to female pupils.

Among medical societies the first is the Academy of Medicine, which includes in all 170 members, charges itself with the examination of new discoveries and remedies, is consulted by the government, and holds animated discussions in its own body. This society has a public session every fortnight. There are also eight other associations; the Société de Médecine, Athénée de Médecine, Société Médicale d'Emulation, Société Médicale du Temple, Société de Médecine Pratique, Société Medico-Pratique, Société Anatomique, Société Medico-Philanthropique.

Four years' study is requisite to obtain a degree of doctor, and the student must attend the lectures in a prescribed order; this matter not being left, as in Germany, to their own choice. They take sixteen inscriptions, and pay therefor about 1100 francs. They undergo five examinations, all of them public. Three professors, in their robes of office, consisting of a black cloak with red lining, and a cap, address questions to three or four students for about fifteen minutes. Every year about three hundred doctors of medicine and surgery are passed. The students mostly reside in the above named Quartier Latin, having there their resorts for breakfast and dinner, (cafés and restaurants,)—their smoking rooms, (estaminets,) theatres, and reading rooms, (cabinets de lecture,) where the Gazette Médicale and the Lancette Française, the popular medical journals, are always to be found. Whoever would learn farther how the Parisian students live in the fifth story, (au cinquième,) in a chamber of which a skeleton is an essential article of furniture, how they arrange matters with a grisette to attend to their clothing and washing, and how on Sunday they resort to the Grand Chaumière, the favourite dancing house before the Porte St. Martin, may find these particulars at length in the Book of the Hundred and One (*Livre des Cent et Un*). They smoke Flemish pipes, thee and thou each other, call a third person, whose name they do not know, Mr. Chose, and maintain in their own quarter, and in virtue of their numbers, a certain authority.

The concours forms in France the most powerful incentive to exertion among medical men. The operation of this principle commences even with the primary and secondary schools. In the six royal colleges they take place in each class, and there is also a general concours de composition, where, in solemn assembly, in presence of the minister of public instruction, the first prize is adjudged, the victor crowned, declared the first scholar of France, (so little account is made of the departmental schools,) and afterwards presented to the king. A concours is again necessary in order to constitute a candidate externe in a hospital; another makes him an interne; a third determines him an agrégé to the faculty; a fourth a professor. The same sort of trial is sometimes necessary in order to become physician or surgeon en chef to a hospital;

and always in order to be admitted to the academy of sciences or of medicine. The concours consists of an oral trial (*épreuve orale*), of a composition furnished in a given time, and of an investigation of previous titles (*titres antérieurs*). The theses must also be defended against the attacks of the rival candidates. The first trial is particularly for students, the two last are for the professors, and are reckoned the most certain. It is natural to imagine that chance, boldness, and fluency, have their influence, and that favour is not wholly excluded.

The students of all nations can *concour* for an externate in a hospital, provided they are eighteen years old; and after three years, if they have not been internes, can again enter the lists for the extension of their externate to a second triennial term. They bleed, &c., under the responsibility of the internes. The latter reside in the hospitals, receive a small salary, and are bound, at the end of the second year, to *concour* for the hospital prize, if not, they lose their place. An externe or interne has, in fact, opportunities for gaining instruction which exist in a far less degree for the mass of students.

Medical travellers always abound in Paris. The liberality with which the French throw open their institutions to strangers, can hardly be sufficiently extolled. Every day, as you take your walk, so free and unnoticed, among the hospital clinics, lectures, &c., you are again reminded of this; and however pompous it may sound, it is yet perfectly appropriate to feel in this respect a gratitude to the whole French nation. On this account, any marked attention to individual visitors might well be excused. In fact, however, no stranger who has any previous reputation established, fails to receive the *vénération* of the French. In the winter of 1835 several foreign physicians formed themselves into a society. It consisted of Italians, English, Americans, Germans, &c., and Ricord of the Hôpital des Vénériens was president. They met every week in the evening in a lecture room of the Sorbonne. The language was French, but the discussions and other proceedings bore a decided impress of the national peculiarities of the different members; and all was conducted by the president with great address. At the close of the winter the society gradually dissolved.

Among the German medical residents in Paris, who are numerous, there is a reading club which takes most of our journals.

The climate of Paris is not unhealthy; during the first days of his residence, however, a stranger is not unfrequently affected with diarrhœa, caused by the dampness of the streets, the defective mode of warming the apartments, or the water of the Seine. The number of those practising medicine and surgery in Paris, according to the Medical Almanac for 1836, is 1229. Some physicians in France have *Maisons de Santé*, so called, or private institutions for patients, who board in these houses and receive treatment and attendance. In Germany and England there are similar establishments, but only for the insane. Living in Paris is in general cheap; the poorer classes content themselves with bread, chestnuts, and sweet-

ened water; and the cherished wish of the Frenchman, the fowl in the pot on Sunday, seems to be but rarely gratified. The medical traveller in Paris will gain both instruction and amusement—the former in proportion to the pains he takes to acquire it; and it is by no means unlikely that he will feel it an act of self-denial when he takes his departure.

LONDON.

London is not the whole of England, as Paris is of France, but it offers in many respects an epitome of all countries. One finds in London such an abundance of scientific materials, that they at least deserve to be united into one whole, and to assume the form and name of a university. Such a metropolitan university is now expected, and it will be able to surpass those of Edinburgh, Dublin, Glasgow, Aberdeen, and St. Andrews, and to take a distinct character from those noble institutions at Oxford and Cambridge. The Thames flows through the town in a curve from west to east—passes under six large bridges and over the famous tunnel—and presents a sort of mixed character of sea and river, having brackish water and a tide. The principal part of the town lies north of the river. In the middle is the city; the west and east ends on the sides, Southwark on the south, and the boroughs form the environs. The shipping on the river and in the docks reaches from the sea to the first bridge. The bustle of the city is gradually extending itself towards the west end, to the squares and parks, where the more quiet people reside, and toward Westminster, where stands the parliament house and the abbey.

There are nine hospitals with schools attached, and a large number of infirmaries, dispensaries, work-houses, &c. The hospitals, which include instruction on the theory and practice of medicine, and on surgery, are, counting from east to west, the following:—

1. London Hospital, school and practice, 485 beds. *Physicians*: Frampton, Billing, Gordon. *Surgeons*: Andrews, L. Scott, Luke.

2. St. Thomas's Hospital, school and practice, 400 beds. *Physicians*: Williams, Roots, Burton, Lister. *Surgeons*: Travers, Green, Tyrrell, South.

3. Guy's Hospital, &c., 400 beds. *Physicians*: Cholmeley, Bright, Back. *Surgeons*: Key, Morgan, Bransby Cooper. *Consulting surgeon*: Sir Astley Cooper.

4. St. Bartholomew's Hospital, &c., 400 beds. *Physicians*: Hue, Latham, Roupell. *Surgeons*: Laurence, Vincent, Earle.

5. University of London Hospital, &c., 100 beds. *Physicians*: Elliotson, Thompson, Carswell. *Surgeons*: Sam. Cooper, Liston, R. Quain.

6. Middlesex Hospital, &c. *Physicians*: Hawkins, Watson, Wilson. *Surgeons*: Sir Charles Bell, H. Mayo, Arnott.

7. St. George's Hospital, &c., 330 beds. *Physicians*: Chambers, Seymour, Wilson, McLeod—*Assistant*: Hope. *Surgeons*: R. Keate, Sir Benjamin Brodie, Hawkins, Babington—*Assistants*: Walker, Cutler.

8. Charing Cross Hospital, &c., 100 beds. *Physicians*: Shearman, Golding, Sigmond, Chowue. *Surgeons*: Pettigrew, Howship.

9. Westminster Hospital, &c., 250 beds. *Physicians*: Bright, Roe, Sir George Tuthill. *Surgeons*: Sir A. Carlisle, White, Guthrie, W. Linn.

There are also three hospitals for syphilitic patients, termed Lock Hospitals; Lying-in do.; several insane do., especially New Bethlehem and St. Luke's; a London fever hospital, three for diseases of the eye, &c. There are five infirmaries and eleven dispensaries. To find a description of these, the traveller will do well to consult the British Medical Almanac, or the last September number of the Lancet, or the London Medical and Surgical Journal, or the Medical Gazette.

The above hospitals are not, as in France, the common property of the nation, but are, with the exception of the three largest, St. Bartholomew's, Guy's, and St. Thomas's, which, together, have a fixed income of £140,000, maintained by the contributions of companies. Whoever, in fact, contributes one or two pounds yearly, or a certain sum at once, acquires the right of sending patients to the hospital, of speaking at meetings, of voting in the choice of officers, of participating in the management of affairs, in short, becomes a governor. Besides the proper physicians and surgeons, there are others whose business it is to deliver lectures on those subjects which are necessary to surgeon apothecaries, or what are termed general practitioners, in their examination at the College of Surgeons, and by the apothecaries' company. These schools at the hospitals have rather a surgical and anatomical than a medical character, and more of a practical than theoretic tendency. As an examples of their organisation, we give here the list of one of the most extensive schools, that of Guy's Hospital.

Lectures.	Lecturers.	Days and Hours.	Fees.	
			£. s.	£. s.
Medicine, }	Drs. Bright and Addison, }	Monday, Wednesday, and Friday, at 3½ o'clock, }	4	4 and 8 8
Mat. medica, }	Addison, }	Tuesday, Thursday, and Saturday, at 3½ o'clock, }	3	3 " 4 4
Obstetrics,	Ashwell,	Daily, at 8½ o'clock,	3	3 " 10 10
Chemistry,	Aikin and Taylor, }	Monday and Friday, at 9¼ o'clock, }	4	4 " 8 8
Anatomy, }	B. Cooper, Cock, and Hilton, }	Daily, at 9¼ and 2 o'clock, }	8	8 " 21
Legal med., }	Taylor, }	Monday and Friday, at 9¼ o'clock, }	3	3 " 4 4
Surgery,	Key and Morgan, }	Tuesday, Thursday, and Friday, at 8 o'clock, }	3	3 " 5 5
Botany,	C. Johnson, }	Monday, Tuesday, Thursday, and Friday, at 6½ o'clock, }	2	2 " 3 3
Pathological Anatomy, }	Hodgkin, }	Tuesday, Thursday, and Friday, at 6½ o'clock, }	2	2
Comparative Anatomy, }	T. Bell, }	Monday and Wednesday, at 6¼ o'clock, }	2	2

N. B. The first named sums are for a single course, the second for unlimited attendance.

The mere visiting of the hospitals and the medical patients, for eighteen months, costs £15 15s.; of the surgical wards, £26 6s. yearly, and £20 half yearly; rendering manual aid as surgeon's dresser, £51 2s. yearly.

There are also special schools with special teachers. The first was founded by William Hunter, in the Hunterian School of Anatomy, Great Windmill street; there are also Blenheim street school, Webb street school, Aldersgate street school, Kinnerton street school, recently founded by Sir Benj. Brodie, Free hospital school, school of anatomy and medicine adjoining St. George's Hospital. In most of these, only single courses are given, but all have attached to them at least a museum and an anatomical theatre. On the whole, there are twenty schools in London. Among the lecturers are, to mention the larger part, in medicine, Davies, Williams, Bright, Whiting, Marshall Hall, Elliotson, Copeland, F. Hawkins, Burne, Stevens, Wilson, McLeod, Seymour. In midwifery—Hugh Ley, Rob. Lee, Davies, Ramsbotham, Rigby, Ferguson, Ryan. In surgery—Lawrence, S. Cooper, Arnott, J. H. Green, Guthrie, Liston, Babington, Hawkins, Pettigrew, Travers, Key. In botany—Lindley, Edwards, Dickson, Hayes, Pereira. In chemistry—Turner, Brande, Faraday, Epps. In pathological anatomy—Hodgkin, Howship, Carswell, Barker.

There are also hospitals and schools, some of which are recognised by the College of Surgeons in London, in the provincial towns of England, especially Leeds, Liverpool, Manchester, Bristol, Bath.

The object of dispensaries is to furnish medicines to the poor, and to attend them in their own houses and among their families. The free hospital receives patients without the recommendation of a governor; which in the others is required, except in case of recent accidents. A self-supporting dispensary is formed by the contributions of the poor themselves, at the rate of a penny a week, and five half-pence for families, in consideration of which they are attended in sickness. Such an one has lately been established, and forms a kind of saving fund.

The English hospitals are mostly large and handsome edifices. The largest are Guy's, St. Bartholomew's, and St. Thomas's; the handsomest, St. George's, Guy's, and the London and Westminster Hospital lately built in Gothic style. The Greenwich, Chelsea, and New Bethlehem, which are rather asylums for maintenance, excel both in size and beauty. As the palace of St. James is by no means splendid externally, it has been said, with some exaggeration, that the sick in London dwell in palaces, and kings in cottages. The hospitals are well provided for, owing in part to the liberality of the English, in part to the general rivalry for a leading share in their internal management. The subscribers, to whom the hospital belongs, hold weekly or monthly meetings for business, and a yearly dinner, at which they converse and make up a collection. Sometimes violent dissensions occur among them. It belongs to

the same body to elect the physicians and surgeons. For the most part, those are chosen who are thought likely to maintain and increase the notoriety of the institution. They receive no other recompense than the fees already mentioned as paid by the pupils, and the advantage they find in becoming known, by their conspicuous position. Although fame and practice may be obtained by means independent of these appointments, yet these are regarded as the surest passport to both. A visit is made daily by one physician and one surgeon, so that each of the attending practitioners comes twice a week. One day in the week is devoted to receiving new patients, always excepting those meeting with accidents, to whom a separate ward is allotted, and who require no recommendation; and one day to operations, generally at one o'clock. This day is in the different hospitals as follows:—

Tuesday, at Guy's.

Wednesday, at the London.

Thursday, at St. George's, and the Infirmary for Diseases of the Eye, in Moorfield.

Friday, at St. Thomas's.

Saturday, at St. Bartholomew's and the Westminster.

The examinations of patients are brief, and afford little instruction to the pupil, because little regard is had to him; at least not so much as in the explanations and questions which occur at the bedside in German practice. Regular clinics have only recently come into general use. If I mistake not, Brodie was one of the first who delivered clinical lectures in cases of disease. They are now common to most of the hospitals, but it is rather in the French manner of general remarks, than by making the student prescribe, and overlooking his treatment, according to the German method. On the other hand, questions are often addressed by the students to the professors, expressed with great freedom, and answered in the same style.

The internal arrangement of the hospitals is not so uniform as under the administration générale at Paris. Baths are not of so frequent application. Cleanliness and order are perfect. The wards are not so large as in Paris, have wooden floors and a chimney, are frequently washed, whitened, and painted, and as free air is deemed of great moment, the windows are often open. The bedsteads are of iron, without curtains, or having these to reach from the head to the middle of the bed. The sick are not in all instances separated according to their respective ailments; surgical and medical patients are side by side. Above the head hangs a ticket, with the name and the directions, the prescribed diet for instance, as broth diet, fever diet, ordinary diet, &c.; the ticket also contains the name of the attending physician or surgeon, or both, when both have charge of the case. In St. George's, the first story contains the medical patients, the second the surgical; the females are in the left wing, the males in the right. There are

nurses appropriated to each ward; the hour of dining is from twelve to one o'clock, and therefore coincides with that of the visit. The sick wear a peculiar hospital dress, by which the convalescents are distinguished from the servants, attendants, &c. A large assembly room, a library, and museum, are seldom wanting; and a botanic garden is an occasional addition.

The pupils are of three classes:—First, those who are enabled by their means and position to take degrees of medicine at Oxford, Cambridge, Edinburgh, or Dublin; these are the fewest in number. Second, those who intend to practice surgery merely, and after examination become members of the College of Surgeons. And third, those who are also apothecaries and general practitioners, and who are examined by the apothecaries' society. The character of these medico-chirurgical hospital schools is therefore not as high as that of the universities. Much might be added to the present objects of instruction. The students make the visits with the physician, and refer carefully to the case-book which each carries with him, and which contains the journals of the cases. They take more part in the treatment, when they are surgeon's dressers, or house surgeons, which situations are expensive. The first, for instance, pay £51 2s. per annum, and £32 12s. for half a year. It must be conceded, that their external appearance, and general manner, make a much more favourable impression than those of the Parisian students. The whole business of medical instruction in the London hospitals and schools, is despatched in seven months, from the first of October to the end of April. During this period only are lectures delivered, which are distributed into two sessions, the second of which commences the middle of January. During the other five months, the hospitals can be visited, and single courses of lectures are delivered; but it necessarily happens that the great proportion of students are absent from London until the session recommences.

Medical learned societies are numerous in London. The Royal Medical and Chirurgical Society publishes the famous transactions. There are also the London Medical Society, the Westminster Medical Society, the Hunterian Society, the Medico-Botanical Society, and other not exclusively medical associations. Among these, the well known British Association is of recent formation; of similar character is the Provincial Medical Association, which holds annual meetings in some of the smaller cities, and likewise publishes transactions.

The climate of England is well known. The earth is fair, the sky is less so. England is damp and foggy, full of sea-coal smoke and soot, but very favourable to the growth of vegetables, cattle, and men. The race of the latter is stronger and handsomer than in France; the skeleton is often nobly formed; a well-shaped head is fitted on a slender neck and narrow pelvis, and the extremities are seldom too long. The skin and teeth are especially free from colouring matter, which seems to be all transferred to the eyes and hair. The mortality in London is not greater than in the country,

and there are many instances of longevity, which would be more numerous, but for residences in hot climates, and the dangers of the sea. The English cuisine does not develope the highest skill in the art; they serve up vegetables in small amount and merely boiled, without any farther preparation; meat in abundance, and wholesome; their breweries afford a strong and nutritious product, and the wines of the south of Europe are generally drank. The good living and the climate have an especial effect on a foreigner. The digestive apparatus accustoms itself to a less amount of more concentrated solid aliment, and to beverage, partly nutritious also, and partly well charged with alcohol, which in this country can be taken and well borne in large quantities. This gross food, with the dull climate, gradually extends its influence from the abdomen to the nervous system. The German begins to feel the English spleen, not, indeed, in the first week, but after some months, and a greater or less propensity to self-murder begins to develope itself. This disposition of mind and body is, however, soon overcome, and the "*mens sana in corpore sano*" is, after all allowance for national weakness, the proper attribute of the Englishman.

A stranger in England finds some difficulty in comprehending medicine and surgery in their various relations, because the hospitals are less accessible and their inmates less talkative than in Paris. In England, you owe your admission into the public institutions to individuals, in France to the nation, and the sense of obligation is much more concentrated in the former case than in the latter. Every time you enter a hospital here you are received with English hospitality; and in his manner to one whom he knows, in the direct frank kindness with which he aids you and procures you the aid of others, the Englishman is a pattern. The various objects of interest are often so remote that one is compelled to exert a constant activity to visit them. Beside the hospitals, one must at least find time to visit the Docks, the Tunnel, the Tower, St. Paul's, Apothecaries' Hall, the Adelaide Gallery, where are to be found models of the latest discoveries in an exhibition got up by a society for "the illustration and encouragement of practical science," both the Geological Gardens, the British Museum, National Gallery, College of Surgeons, which at this moment cannot be seen on account of repairs, the College of Physicians, Westminster Abbey, Parliament House, Vauxhall Gardens, the theatres, &c. But the stranger will meet with abundant objects of curiosity, even in the streets and highways, more or less suited to his taste. On the whole it is advisable not to adopt the *nil admirari* principle, not only because it is a cold pleasure-destroying maxim in itself, and here particularly misplaced, but because the English expect that a stranger should both see the lions and express a due degree of wonder.

For the further illustration of the state of science in England, and that the reader may gather a general impression of the knowledge possessed by the surgeons, general practitioners, and doctors of medicine, I subjoin the regulations adopted respectively by the

College of Surgeons, the Apothecaries' Company, and the University of Edinburgh, for the conduct of their examinations.

The council of the College of Surgeons, consisting of twenty-one examiners, require of the candidates,—

1. To be twenty-two years old.
2. To have devoted five years to acquiring a knowledge of the science.
3. To have studied anatomy and physiology by attendance on lectures and demonstrations, and by personal dissection during two seasons of at least seven months.
4. To have attended two courses of lectures on surgery.
5. To have attended lectures on physics, chemistry, and midwifery, for six months, and on materia medica for three months.
6. To have attended surgical practice for twelve months in a recognised hospital in London, Dublin, Edinburgh, Glasgow, or Aberdeen; or twelve months in a hospital elsewhere and six in one of the above.

The board of examiners of Apothecaries' Hall require,—

That the candidates shall have attended lectures during three winter sessions (from October 1 to April 15), and two summer sessions (from May 1 to July 31).

First Winter Session.—Chemistry, anatomy, physiology, anatomical demonstrations, dissections, materia medica.

Second Winter Session.—Anatomy and physiology, anatomical demonstrations, dissections, theoretical and practical medicine, medical practice in a hospital.

First Summer Session.—Botany, and other similar subjects, subservient to general education.

Second Summer Session.—Botany, if not attended the preceding season, midwifery, diseases of women and children, legal medicine, medical practice in a hospital.

Third Winter Session.—Dissections, theoretical and practical medicine, midwifery, medical practice in a hospital or dispensary.

They must likewise have served five years' apprenticeship to an apothecary, and be twenty-one years of age.

The examination consists in translating out of Celsus and Gregory's *Conspectus*; in medical prescriptions and questions from the *Pharm. Loudin.*; in chemistry, materia medica, botany, anatomy, and physiology; in theoretical and practical medicine. Besides the general means of gaining the necessary knowledge to withstand these examinations, there are special teachers who prepare candidates at short notice, and are called "grinders." Both classes, as well surgeons (always distinct from the pure surgeons) as apothecaries, in general commence their career by being apprentices to an older practitioner.

The University of Edinburgh, according to the latest statutes for 1833, makes the following requisitions:—

1. No one can obtain the degree of doctor of medicine who has not devoted four years to medical studies, at least six months in each year, either in Edinburgh, or at some other university, where degrees of M. D. are conferred.

2. He must give evidence of having studied the following branches under a professor at a university :—

Anatomy ; chemistry ; materia medica and pharmacy ; institutes of medicine ; practical medicine ; surgery ; midwifery and diseases of women and children ; general pathology ; practical anatomy ;—in six months' courses.

Medical clinics, or the management of patients under a professor who lectures on the cases, in courses of six or three months.

Surgical clinics ; legal medicine ; botany ; natural history, including zoology ;—in courses of three months.

The candidate must also have dispensed, prescribed, and practised, for six months, with a recognised apothecary or surgeon, or in a hospital.

3. He must be twenty-one years old ; be versed in the Latin language ; in literature and philosophy ; and must himself have written a dissertation in Latin or English.

4. He must be examined orally, or by writing, by the faculty,—*First*.—In anatomy, chemistry, botany, theoretical medicine, and natural history. *Secondly*.—In materia medica, pathology, practical medicine, surgery, midwifery, and legal medicine.

5. If rejected on examination, he must study a year longer before a second trial.

6. If passed, he is expected, though not compelled, to print his thesis, and then forty copies must be given to the dean.

The degree is conferred in August ; some days previous he is called on by the senatus academicus to defend his thesis publicly.

These regulations are obviously similar to those of the German universities. The University of Edinburgh, which for some time had been losing its ancient renown, made a great effort to regain its position. Hence the adoption of these rigid conditions ; a measure which Sir Charles Bell, who goes thither as Professor of Surgery, has been earnest in forwarding.

CHAPTER II.

DOCTRINE OF INFLAMMATION IN FRANCE AND ENGLAND.

Surgical and medical doctrine of inflammation—Origin of both—Distinction between them—General character of medicine in France and England—Overweaning regard to the blood—Reaction—Sir C. Bell's nervous theory.

The importance which has ever been attached to the theory of inflammation is well known, and it will not be disputed that this subject holds even a higher place in science at the present day than at any former period. If we take this then as our guide in judging of the condition of medicine and surgery in the two nations, we shall find this main distinction in the manner in which this subject is regarded in France and in England. In the latter country the theory of inflammation is more nearly allied to surgery, in the former to medicine. This distinction, which cannot easily be misunderstood, has no reference to the view taken of the nature of inflammation, but solely to its connection with one or the other of these departments of science.

The improvement of the doctrine of inflammation in England was effected in surgery by John Hunter; in France, in medicine, by Broussais. It will be proper to allude to some circumstances attending this accidental diversity, then to adduce some proofs of the existence of the distinction already stated, and lastly to apply this as the basis of a parallel between the state of medicine in the two nations.

It is almost impossible to estimate too highly the wonderful labours of John Hunter. Besides improving both branches of natural history, zoology, and botany, both in extent and accuracy, he took at once possession of the whole subject of medicine. While investigating, however, with so much success, human, comparative, and pathological anatomy, and particularly the process of inflammation, he took rather the surgical than the medical view of these subjects. He not only came forward first, and proved by his own investigations, when the question arose in regard to the formation of pus, that no pus is formed without preceding inflammation; he not only pointed out, in analysing the process of healing, its analogy to secretion; not only described granulation, adhesion, respiration, descriptions of which surgery has most advantageously availed itself; but likewise, and this fact should be made especially prominent, he made the subject of inflammation the central point of his pathological researches, and proposed it to succeeding enquirers as of primary importance and moment. As he considered inflammation, at least after injuries, to depend on the state of the blood and vessels, and its various modifications to be determined by the nature of the tissue, especially in syphilis, he impressed these principles so strongly on his countrymen, that their surgery still retains the same leading character. He died in 1793. His surgical disciples followed in the track thus pointed out. They made the anatomy of

regions their groundwork, regarded inflammation as he had taught them, only superadding Astley Cooper's doctrine of irritation, and thus carried surgical treatment to a degree of simplicity and clearness, which aroused the wonder and excited the imitation of other nations. Their untiring zeal likewise produced museums filled with anatomical and pathological preparations. But, as already remarked, medicine has gained much less advantage from Hunter's influence. When the British parliament purchased Hunter's collection and offered it to the College of Physicians, the latter declined receiving the gift, on account of the expense of preserving the specimens; the College of Surgeons, as well became them, accepted it with great joy, and still regard it as the greatest treasure.

While in this manner the theory of inflammation obtained an important place in English science, it had in France a different destiny, and became a part of medicine. At that time (1800) Pinel's nosography was the whole of French medical science. But a great revolution was soon effected by the genius of Bichat, to whom Pinel himself was not a little indebted. Xavier Bichat overturned the simple general system of anatomy, pointed out the variety of the structure and of the physiological life of the membranes, brought prominently into view pathological anatomy and the local character of disease, but died before the application of his discoveries could be made to medical science. On this Broussais came to the rescue, seized with the whole force of his mind the doctrine of inflammation, and raised it high above all others. He did not investigate its progress, nor illustrate it, like Hunter, by direct observation, which indeed was difficult when it occurred in internal parts, but he proved that it was or had been present. He acknowledged no difference in its essential character, but only a variation in degree. He carried it so far as to found upon it a complete system of medicine, and he has carried the assumption and treatment of inflammatory conditions to an extent and perfection, which, notwithstanding all opposition, has gained him numerous adherents, and caused the idea of inflammation even now to predominate in medicine.

The following may be recognised as the distinguishing features of the medical and surgical doctrines of inflammation :—

The first concerns their anatomical relations. The surgical doctrine has descriptive anatomy, or that of regions, for its basis; the medical rather general, or, in the sense of Bichat, physiological anatomy. The former contemplates inflammation in the external integument, the cellular tissue, the bones, the synovial membranes, the muscles and tendons, the fascial arteries, veins and nerves, or, by regions, in several of these together; the latter rather considers it in the organs of the three great cavities, in their various composition and structure, in the parenchyma, in the glands, and among the simple systems, especially in the mucous and serous membranes.

Another great distinction lies in the far larger number of results which the medical school admits; results at least in this sense, that organic changes are supposed to be necessarily preceded by inflam-

mation or stimulus. The doctrine of Hunter acknowledges no other results than discussion, hardening, adhesion, suppuration, ulceration, and mortification, while the other has, besides these, hypertrophy, the whole series of accidental formations, tubercles, softening of and exudation from the serous membranes. This is in fact a very important point, one which connects itself especially with the Broussaisian doctrine. Hence the importance of the contest which Broussais had with Laennec respecting the origin of tubercles, whether here any sub-inflammation or excitation precedes; in other words, whether tubercles are enlarged lymphatic glands as Broussais maintained, or of the nature of deposit, as Laennec thought. Laennec died, and his rival remained for the most part victorious, by the general admission of a preceding stimulus.

A third distinction is more important, as respects the treatment, than the second. The surgical view divides inflammation into healthy and unhealthy; the medical regards it as simply unhealthy. What in one view is welcomed, cherished, or at most moderated only, is, in the other, opposed by the most powerful measures. The latter sees in inflammation, excepting only the so called critical abscesses, only a disease, never a wholesome effort of nature.

Applying this scale to the comparative condition of medicine and surgery in the two countries, we find that in England surgery is constituted and acts in perfect harmony with the simple and sure knowledge of surgical inflammation; but that medicine is less conscious of any doctrine of inflammation, and makes less, whether too little is hard to say, account and application of it; that in France, on the contrary, inflammation predominates (whether or not too much is easier to determine) as an almost constant local affection, while in surgery it is much less, in fact, very little, estimated and regarded. English medicine is therefore free from the uncertain medical inflammatory states which characterise the French, and French surgery is too little acquainted with the, so considered, surgical inflammation of England. Other circumstances of difference are found in the literature and the practice of the two countries.

The distinguished writers on inflammation in English literature, as Hunter, Duncan, Thompson, Astley Cooper, Travers, James, Wilson, Lucas, Jones, Earle, not to mention others, are numerous. In France there is hardly a monograph to be mentioned on the subject of inflammation, except that of Gendrin (in 1826), who thereby gained a prize, and who keeps especially in view the general tissues of Bichat.

In practice, the French surgeons still retain their preference for healing by the second intention; a preference which, unless founded in endemic constitution, in peculiar aptitude to erysipelatous inflammation, or in the want of plasticity in French blood, is certainly to be regarded as a great mistake. Roux was surprised during his visit to England, in 1816, when he saw the treatment of wounds by adhesive methods. He tried the experiment in his own hospital, but has for the most part gone back since to his

former system. On this subject there has been a strong conflict of opinion in France. Dupuytren did not wholly reject this method, and so far Dubois, Richerand, and Maunoir agreed with him. But Pelletan, Boyer, and Larrey, maintained their opposition. Larrey says on this subject in his *Clinique Chirurgicale*, for 1830:—"Union by the first intention is not always desirable, especially not in general or chronic disease; and for the rest there is never much to be gained by it." Serre, of Montpellier, has lately written on this subject a "*Traité de la Reunion Immédiate*." The latest essay is by J. Sanson, "*De la Reunion Immédiate des Plaies*, 1834," in which he endeavours to estimate the advantages and evils of the practice. This matter, therefore, which is considered as settled in England, is still a subject of controversy in France. The English always attempt primary union in the first instance, and if this fails, content themselves with the secondary. The French know as little in regard to the beneficial operation of cold water. They still use more lint and more cerate than any other surgeons.

In Germany, where all foreign improvements are well known, and where, perhaps, on deliberate comparison, the two forms of inflammation are viewed in their correct relation to each other, much attention is paid to what is termed the specific character of inflammation, a subject on which I shall not attempt to enlarge in this connection (see fifth chapter on Ophthalmology). The whole subject of inflammation, however, the nature of which, and the extent of the application of the term, are both subjects of dispute, has always one circumstance attending it, the condition of the blood and blood-vessels, which especially attracts attention. Since Harvey's discovery of the circulation, the blood and its vessels have been kept constantly in view. These formed the leading objects with Boerhaave, in his theory of the thickening of the blood and the pressure of the globules into the capillary vessels; of Cullen, in his doctrine of spasm in the small vessels, and of Hunter, in his assumption of the vitality of the blood. The effect of this was evident in the treatment. Attention was directed to antiphlogistic means, and to withdrawing that which was regarded as the cause of the morbid process. The greater the importance attached to the local inflammation, and the less the phlegmon was regarded as a general disease, the more thorough was the antiphlogistic practice and the abstraction of blood. It was also a circumstance calculated to bring medicine nearer to surgery, and thus to simplify practice, that the surgeon easily held himself qualified to practice on medical diseases with the means peculiar to his own art, provided the case, complicated or difficult as it might be, had this process as its leading cause. It necessarily happened, however, that opposition arose to this frequent blood-letting, and consequently to the so general admission of an inflammatory condition, with which view this mode of depletion came to be almost inseparably connected. In this way, therefore, on the ground of treatment, of practice, arose the first reaction against the doctrine of inflammation. This may be seen plainly enough both in France and England. In France

Louis announced, as early as 1828, and afterwards in 1835, after new investigations, his "Researches on the Effects of Blood-letting in certain Inflammatory Diseases." In this work he condemned the excessive confidence which had been reposed in bleeding in pneumonia, and from his observations, made according to the numerical method, he draws the conclusion that venesection may exert a favourable influence on pneumonia and abridge its course, but only when employed in the first two days or towards the close; and that this influence is much less than had been generally imagined. This work is dedicated to an Englishman, Marshall Hall, who himself published in 1832, in the seventeenth volume of the *Medico-Chirurgical Transactions*, some experiments on the effects of loss of blood, made on dogs, to determine how this depletion acts where there is no morbid state, what difference is made by age, what organic changes ensue upon the operation, what rules and bounds can be prescribed to the employment of the remedy, and what is the most effectual mode of restoration after hemorrhage. In 1835, J. Wardrop published researches on blood-letting. These are at least evidences of a tendency to, and readiness for, a second and more decided reaction against the antiphlogistic course hitherto pursued. A circumstance favourable to this tendency may be found in the prevalence of that genius epidemicus, which causes typhus to abound. Such an explanation, however, of the change of theory and of practice in medicine is entirely too German and too ingenious for a Frenchman to understand.

The other change in the theory of inflammation seems destined to be effected by physiology. As the doctrine of Hunter was preceded by the discovery of Harvey, as this was the true fountain from which flowed that current of reasoning by which the supremacy of the blood was established, so in our days all are ready to attribute an augmented degree of importance to the nerves, the natural rival of the circulating system. The discovery of Bell has been justly placed in comparison with the discoveries of Harvey. The truth of his doctrine of the nerves, and, to use the expression, of the nervous circulation, the distinction of the motive, sensible, respiratory and organic power has, with greater good fortune, met with notoriety, belief, confirmation, respect. This happened as well in England as in France and Germany, through such men as Marshall Hall, Wilson Philip, Magendie, Flourens, Panizza, Bellingeri, John Müller. Nowhere, perhaps, out of England, have these new views met a more cordial reception, or been applied more extensively to pathology and therapeutics than in Germany. Thus far, indeed, it cannot be pretended that these views of the physiology of the nerves have been applied to explain, or have had any direct influence on, the doctrine of inflammation. But perhaps it is not unreasonable to hope, that the light which has been hereby thrown on the subject of local pain and palsy, may yet be extended to this.

CHAPTER III.

FRENCH MEDICINE.

Broussais's doctrine ; extent of its influence—French medicine independently of Broussais—Auscultation and percussion—Louis and the numerical method—Fièvre typhoïde—Reflections on French therapeutics—Ricord's observations and practice in the Hôpital des Vénériens—Phrenology and Orthophrenia.

We must now allude again to Broussais and his doctrines, without which, any account of French medicine must necessarily be imperfect. This brief review will probably make it evident to many that much of his doctrine has been adopted into the science, and has tended to form the peculiar national views on the subject. We shall speak first of Broussais's views on inflammation—then upon sympathy and revulsion—lastly, on the relative importance of the mucous membrane.

Broussais does not pretend, in his pathology of inflammation, to explain its nature, but only to prove its extensive existence, and to demonstrate that the inflammatory condition of an organ is only an increase of its vitality ; he dwells especially on the mere distinction of degree, but rejects the various forms of the disease. Hence he called his doctrine the physiological, because inflammation is not a new condition in the economy, but an exertion of the usual organic vitality. Thus the vascularity of the stomach during digestion is physiologically in its normal state, but pathologically somewhat increased. He rejects, therefore, what he terms *entities*, by which are meant separate and dissimilar conditions of the economy, and equally rejects all specific treatment. He denies scrofula and syphilis to be distinct entities, and seeks to explain the medicinal virtue of cinchona and of mercury, by the transfer of local irritation to internal mucous membranes. He proposes three degrees of phlegmasia ; beside inflammation there is sub-inflammation, in which there is no redness, because the red particles do not force their way into the serous vessels ; and likewise mere excitement or irritation.

Broussais has pointed out the facts, that we may have an intense local inflammation in a weakened constitution ; that the greater part of diseases have an actual local cause, and that this is of an inflammatory or irritative nature—in fact, of a nature to be benefited by counter-irritation. Thus far he deserves credit for the pathology of pneumonia, bronchitis, pleurisy, and for the explanation of phthisis, asthma, whooping cough, hydrocephalus. He pointed out that inflammatory stimulus gives occasion to delirium, mania, epilepsy, apoplexy ; farther to stricture, blennorrhœa, adhesion. He thus supplied a cause for all the organic alterations which pathological anatomy found in such abundance, especially in regard to the alimentary canal ; he maintained that pain was not always a companion of inflammation, that the mucous membrane might be inflamed alone and without involving the peritoneum, that dyspepsia,

jaundice, (duodenitis,) *tabes mesenterica*, (swelling of the mesenteric glands, as a sequel of gastro-enteritis, analogous to swelling of the inguinal glands in inflammation of the urethra,) diarrhœa, dysentery, melæna, ascites, and diseases of the kidney, depend on inflammatory states.

He farther considered the pathology of fever. He taught that fever may arise from inflammation of a part, when sufficiently active to be transferred to the heart. "In this case the contractions of the latter are more rapid, the circulation is accelerated, and the increased heat of the skin is found painful; symptoms which we name fever. Nay, wherever there is fever, if a local affection is the maintaining cause, it is not an essential fever." He does not say, indeed, as should here be remarked, that all fevers proceed from gastro-enteritis, but he says that disease, that is, irritation, of an important organ may cause disease in another organ through sympathetic irritation.

The doctrine of sympathy and revulsion was especially rendered prominent and clear by him. Sympathy is the physiological relation in which organs stand to one another; revulsion appears in pathological conditions. Sympathy rests upon two laws, which constitute sympathy of relation, or that of animal life and organic sympathy. Examples of the first are found in inflammation of the mucous membrane, of the alimentary canal, headache, convulsions, delirium; organic sympathy, on the contrary, shows itself in excitement of the circulation, heat of skin, jaundice, or in the respiratory organs in cough and oppression. If the animal sympathy is excessively excited, the patient may die in consequence of a reaction upon the nervous system of animal life, and if the sympathy of organic life is unduly roused, he may fall a victim to disease of the lungs, liver, &c. Hence it especially results, that sympathetic excitements of the functions, when great and long continued, may from functional be converted to actually organic diseases. Thus headache in enteritis may proceed to actual inflammation of the brain, or through intense and continued sympathetic affection of the heart, disease of this organ may be developed; pneumonia may arise from cough and stricture; or, in inflammation of the brain, a gastritis be brought on by the vomiting. Hence it is unscientific to direct the treatment to the functional disease alone, and much safer to consider the organ itself as affected.

Revulsion is a change of the seat of disease dependent on sympathy. It may be effected by art, and employed as a therapeutic agent, or occur independently of interference from treatment. An example of the former is afforded by blistering in pleurisy, of the latter by metastasis to the mucous membrane of the intestine in pleurisy. Revulsion is threefold. It may take place from one internal part to another, which is internal, from an external to an internal, which is central, from an internal to an external, which is peripheric revulsion. The advantage or danger of revulsion has been always considered as depending on the comparative importance of the parts between which the exchange is effected, and like-

wise on their respective ability to relieve themselves by secretion. This, for example, cannot occur in the brain, and hence it is especially desirable to effect revulsion from this organ.

Artificial revulsion is now always readily employed in treatment, though nature cannot always be successfully imitated in this matter; and it might well be supposed that Broussais, who has so ably described its influence, would especially recommend its application. He reminds us, however, that revulsive measures are in their nature stimulant, and though for the most part local in their action, may become the source of actual inflammation, and thus another organ be rendered the seat of disease, unless increased secretion supervene, which is not always the case. Thus drastic cathartics, diuretics, and hepatic stimulants may prove irritant to the kidneys, intestines, and liver, unless the respective secretions ensue. Broussais therefore rather opposes than favours active revulsion, though he allows that crises are retarded by acute local inflammation; when this is relieved, the crisis supervenes, and this offers the best means of bringing about such a result.

Gastro-enteritis, in its relation to the doctrine of Broussais, demands especial notice. Broussais, who maintains that the whole system can never suffer simultaneously—be universally aroused or depressed—but that local excitement in one part must be accompanied with local debility in another, also thinks, and thus far with Brown, that local stimuli determine this. When by their means excessive excitement occurs in one part, this happens first to those organs which are most abundantly supplied with nerves. This applies especially to the brain, which, however, resists inflammation much more than others, while no part is more susceptible than the digestive apparatus. The lungs are less so, because although well supplied with blood they are less rich in nerves, “not so thickly strown with these irritable nervous papillæ” which, furnished by the ganglionic system, and by the numerous ramifications of the cerebral nerves, give to the stomach that extreme sensibility which so well fits it for its peculiar functions. It is because the organic sympathy, and that of relation, are so closely united in the alimentary canal, that irritation there is so easily produced, sometimes primarily, and sometimes, if considerable inflammation is developed in another part, the alimentary canal is destined to suffer secondarily. He adduces, as an example, the case where, after lithotomy—and he might have added, after injury of the head and brain, in an individual of good constitution—fever and inflammation follow, and while the irritation extends, congestion takes place in various organs, in none more frequently than that of digestion; and if circumstances, predisposition, and treatment favour such a result, gastritis or peritonitis is developed. Few fever patients will be found in whom pressure on the stomach is not painful. How little encouragement Broussais requires, in order to decide on the presence of inflammation, is hinted above; and according to him, inflammation of the gastric mucous membrane is very apt to extend downward, and thus a gastro-enteritis to be developed. With him

dyspepsia is gastritis, vomiting happens from inflammatory swelling and contraction of the pyloric orifice, diarrhœa because the inflammation extends to the ileo-cœcal valve; dysentery is colitis, dysury cystitis, and red tongue and throat indicate the internal fire which blazes up as through the crater of a volcano. Acute cutaneous diseases show themselves in a kind of erythema, and if a certain constitution of the season is present, the character of the disease is still more marked. The victim of measles or scarlatina dies, not of the affection of the skin, but of the accompanying gastritis. Though Broussais was not the first to notice, he has directed attention to the fact, that the fatal or favourable termination, the more or less rapid return of strength in these diseases depends, not on the eruption, but on the condition of internal organs. Assuming the fact that enteritis is usually present in fever, (for the charge that he makes it essential to the latter is unjust,) he never applies internal means, which might produce local irritation, but demulcents, oils, gum-water; while cathartic medicines are replaced by mild enemas, and leeches and cupping form the most active remedies.

How far do dissections maintain these doctrines? Dissections have proved much. Few bodies are opened without finding evidence of visceral affection, sufficient at least to have maintained the fever which proved fatal. Andral, an opponent of Broussais, as we shall see below, has given an account of fifty examinations of persons who died of fever. He found, in three fifths, sufficient disease in the intestines to account for death. Of the remaining two fifths, three were cases of erysipelas of the lower extremities; two, arachnitis; two, croup; one, hepatisation of the lungs; four, diseases of the stomach; and in four the lungs, liver, and spleen, were filled with hydatids. (See below *fièvre typhoïde*.) Are we not then justified in adding something to the doctrines of Pinel, Cullen, and Frank, in regard to fever, or in deducting something from them? As respects the extension of the doctrine of inflammation, which Broussais allows himself, the explanation of this is, that dissection decides nothing absolutely. While others, and even Abercrombie, have found great vascularity of the mucous membrane of the stomach, without being satisfied of the presence of inflammation, Broussais requires much less to decide upon its presence.

Andral will often describe as hyperemia or deficient nutrition what Broussais terms irritation or sub-inflammation. Andral, too, blames the reducent plan of Broussais in actual inflammation, and maintains that, in the advanced stage of fever, the good effect of stimulants may result from the asthenic condition of the whole system.

I know not exactly when the intestinal scissors were invented; but it appears to have been this instrument which determined Broussais to invest the new discoveries in the alimentary canal, due to the activity of his mind, with more importance and distinctness. In the intestinal canal is evidently found the nidus of his doctrine.

How great the authority of Broussais once was, is well known ; it is now on the wane. When one sees him take his seat in the large hall of the school of medicine, in the red cap of the faculty, and his blue spectacles ; how he directs his eyes to one spot, chafes more and more as he proceeds with the theme of irritation, and calls to his auditors, the number of whom fills only the first bench : "Why then, young men, is there no one among you with good sense enough to oppose this doctrine of general symptoms, so that science may march on—march !" he sees at once that the spell is broken. In the midst of his lecture new hearers enter the doors above and below, until the amphitheatre is filled. They are attracted, however, not by the eloquence of Broussais, but by their desire to obtain places for the lecture on internal pathology, which Andral delivers an hour later.¹

One who considers what would have been the history of French medicine without the appearance of Broussais' system will probably be led to the conclusion, that all the means existed before his time of bringing it to that condition in which it is at the present moment. Broussais imparted to the pathology of the alimentary canal, and to inflammation, an excessive importance, which has been diminished gradually, or is now in the progress of being so, to that just measure to which the regular progress of science would in time have brought them. Pinel formed his system in the true French spirit, as shown in the mathematics of Descartes and the sensualism of Condillac. The eternal contest carried on in the world between spirit and sensualism, power and matter, then decided itself in favour of the last. Hunter's theories and labours contributed to this end. Portal began to apply himself to the study of pathological anatomy, and, above all, Bichat opened a path in the same direction. This Bichat—whom, as Corvisart expresses it, Europe envies to France—who died in the thirty-third year of his life, is still the wonder as well as the idol of the French. He said : "To observe nature, to collect facts, to derive general principles from these facts ;—who are we, that we should turn away from this path ?" "What is observation," said he again, "if we do not know the seat of disease ?" In a word, as Bichat introduced anatomy into physiology, and physiology into anatomy, so in the application of his views to medicine, which, alas, he did not live to make himself, disease gained a local habitation.

¹ The following statistic table will confirm the assertion of the diminished success of the Broussaian doctrines. In 1823, France still exported leeches to the number of more than a million. After this she exhausted not only her own supply, but also that of England, Germany, and Hungary, and has even drawn them from Moldavia and Wallachia.

	<i>Import.</i>	<i>Export.</i>
1820		1,157,920
1823	320,000	1,188,855
1827	33,634,494	196,950
1833	41,654,300	868,650
1834	21,885,465	868,650

Whether French physicians now become blind partisans of Bichat, or whether, as generally happens, they have judgment to reject his extravagances, they at least stand on the general ground of localisation which characterises the medical science of the present day.

AUSCULTATION AND PERCUSSION.

In order to find the seat of disease, to estimate changes of structure during life, the physical signs which are determined by the sense of hearing, have been clearly studied in France. The investigation of these by Corvisart, according to Avenbrugger's plan of percussion, led, after Laennec's invention of the stethoscope, to unexpected results. Medicine, surgery, and midwifery, all found in this instrument important aid for diagnosis. Its adoption is general in France, scarce less so in England; but in Germany, for some unassignable reason, least of all. We have translated all the works on the subject, but made little practical application of them, and our literature can boast of but a single original treatise. To insist on the importance of auscultation and percussion, is hardly needed; no one has been found to entertain doubts on these points, who has once applied and understood them. It is well known, that both modes of hearing may be either mediate or immediate. In auscultation, we catch the active sound of the passages, and detect their physiological and morbid alterations. In percussion, a passive sound or echo is elicited by a blow. In auscultation, either the naked ear is applied, or the stethoscope intervenes, by which latter mode the sound may be heard in a more limited space, and from parts to which the ear could not be applied. In percussion, the fingers are applied to the bare walls of the chest, or another finger, or an ivory instrument, termed a pleximeter, is interposed.

As both these means of diagnosis have been most extensively adopted in France, the best judgment of their utility can be formed by reference to the state of medicine in that country. Auscultation and percussion necessarily bring into play living pathological anatomy, or, more properly, anatomical pathology. This is pursued at present in France with a zeal which appears to many to be too exclusive. We are reminded how the observation of the tongue, the urine, the pulse, have successively absorbed attention, and exclusively directed practice. In reply it is said that this was not the fault of the means, but of those who employed them. This physical exploration, too, applies itself more directly than the others to the symptoms of disease. The distinctness with which organic diseases of the bronchia, of the parenchyma, of the lungs, of the pleura, of the ventricles, of the heart, the valves, and pericardium, can be discriminated, affords, besides the advantage for diagnosis and prognosis, frequently another for the treatment immediately connected with it. This is more true of acute than of chronic disease; but in the latter, at least, the prognosis is rendered more satisfactory. To have such auxiliaries to determine whether inflammation of the lungs, of the bronchia, or of the

pleura—whether endocarditis or pericarditis is present, cannot but be desirable in the highest degree to the practitioner. These signs, too, inform us, not only of the existence, but of the extent of disease; how far tubercles have advanced; whether pneumonia is present; whether a cavity exists; to what parts of the pleural or peritoneal cavity effusion has extended; what alteration has occurred in the condition of the heart, organic or otherwise; whether the difficulty in breathing has an organic cause, or is only functional. They assist the accoucheur to determine the presence of pregnancy, the existence of twins, the life or death of the fœtus; they facilitate to the surgeon the diagnosis of swellings, whether these consist of water, hydatids, air or solid matter. These advantages are too obvious to need illustration. But to make these means still more acceptable to the practical physician, it may be added, that a knowledge of their application is by no means difficult to acquire, since the most important and useful indications are readily detected. In percussion, to distinguish the flat sound from the clear, in auscultation, to discover the crepitating sound of pneumonia, or detect the second sound of the heart, is soon understood, and its use appreciated. The more minute and nicer distinctions, it is admitted, require longer practice to understand; but in regard to these there is no certainty, even to the most practised ear. Two auscultators may differ in the interpretation of a sound which both detect; and it is admitted, *a priori*, that it is not advisable to make these nice distinctions. Thus, for example, the discrimination between bronchophony and ægophony is no longer held to be of practical use. Louis even reproaches Laennec with having abandoned himself to auscultation too much in certain cases in deciding on the existence of pneumonia; maintains that nothing positive can be concluded from crepitation, independently of other symptoms, as expectoration, &c., and that he himself, notwithstanding his practised ear, was sometimes unable to distinguish between the crepitating and subcrepitating râles (the signs of bronchitis and pneumonia). It is, indeed, acknowledged that auscultation and the other means of exploring are inadequate to a certain result, unless other symptoms are taken into the account.

The value of physical signs in determining diseases of the heart is, perhaps, as great as in the exploration of the lungs, although the results to be obtained are less certain than in pulmonary affections. That the diagnosis in the former case falls short of perfection, is abundantly proved by comparing careful and candid reports of cases with the subsequent autopsy. To illustrate the difficulty of this diagnosis, two considerations only need be mentioned. In regard to the causes of the second sound of the heart, no less than five distinct opinions exist; when, therefore, this becomes altered, or its recurrence irregular, we have no right to draw any certain conclusion from this circumstance. Farther, the position of the heart may, by hypertrophy and enlargement, be so changed, that the right and left sides of the organ, usually referred to the end of the sternum, and to the left præcordial region, between

the fourth and seventh rib, may vary so materially from these relations as no longer to be recognised.

From these considerations, it appears to be advisable and necessary to depend entirely on the more prominent signs. The physician will not be permitted in private practice, as in a hospital, to place his patient in unusual positions, and the application of the auscultating instruments may cause annoyance. The latter objection usually yields to habit, but it may often be met from the commencement by applying the ear to the back instead of the chest, while light percussion with the finger interposed is seldom objected to.

The improvement of the latter operation by the employment of a small plate of ivory, as above mentioned, is due to Piorry. There results from this, besides the resonance of the chest itself, the peculiar sound of the substance employed, which, when once understood, can create no confusion. An advantage, however, arises from this source, that the percussor has a sensation of resistance, and thus the thickness of the organ below, and its degree, can be judged of by the sound. In this manner, the thickness of the liver, or of any tumour lying below the parietes of the abdomen, can be inferred with some approach to accuracy. Piorry formerly laid down certain distinctions respecting the various shades of resonance, but omitted these in the second edition of his treatise on the subject, as tending to increase the difficulties of the learner. Simplicity, on the whole, seems to be the best rule.

One injurious effect may here be noticed, which is liable to follow from both methods of exploration, but by which the value of the science itself is by no means impaired. This is a passion for post mortem examinations. A passion of any kind may be injurious when indulged to excess, and this is the more to be feared, as it throws treatment too much in the back ground. Curiosity, and particularly a desire to know whether the diagnosis given was correct, must often cause the autopsy to be expected with impatience, and the consequence, though wholly unperceived by the practitioner, must be, that the real object, the restoration of the patient, will be more or less lost sight of. This is particularly unfortunate for French practice, which is already feeble enough, and their want of attention to this point appears the more natural, when we remember that a lively temperament and want of circumspection are respectively the cardinal virtue and leading fault of their national character.

Andral, Louis, Bouillaud, Chomel, Piorry, Reynauld, and Fouquier, are seldom seen visiting their patients without a stethoscope, and as they have the opportunity to acquire great skill in their hospitals, other physicians are induced to call them in consultation in cases to which this important aid of prognosis and diagnosis is applicable.

LOUIS AND THE NUMERICAL METHOD.

Louis, now one of the most esteemed French physicians, was from his seventeenth to his thirty-third year in Russia, where he studied and practised. He made while there the oft-repeated observation, that a great disproportion exists between the multitude of theories, and the small number of observed facts. Accidental circumstances called him back to Paris. He became acquainted with Broussais and his doctrines, followed assiduously in his footsteps for a considerable time, and satisfied himself that while Broussais clearly proved others in the wrong, he was very far from being always in the right. On this Louis came to the determination to devote himself as closely as possible to pure and simple observation. He gave up practice, entered Chomel's ward in La Charité, and carried out his purpose like a solemn vow. He passed, as he tells us, from three to five hours daily in the hospital, and each autopsy employed him fully two hours. He collected the histories of one thousand nine hundred and sixty cases, and the post mortem appearances of three hundred and fifty-eight. These formed the basis of his work on phthisis, which at once raised him to the highest rank among medical writers. At first his scrupulousness was ridiculed; but when he came forward with the results he had obtained, every doubt vanished, his practice attracted notice, and from that moment dates that pursuit of statistic comparisons which distinguishes the Parisian schools. For the last six years Louis has been a physician at La Pitié, and, though not a member of the faculty, holds a clinic on his own account, which is attended by a numerous audience, especially of strangers. He says: "Whenever I have formed an idea *à priori* without analysing the facts, I have always (?) found after this analysis that my *à priori* conclusion was false." With this strict impartiality he proceeded to the observation of acute disease. In 1826 appeared his "Anatomico-Pathological Researches in several Diseases," then his "Gastro-Enterite" and "Typhoid Fever," containing minutes of three hundred post mortem examinations, and more than nine hundred cases. He has now become an opponent of Broussais, and a partisan of Laennec.

This numerical accuracy, however, to which Louis was led by his honest zeal, and his upright opposition to uncertainty, must be regarded as especially favourable to the progress of medicine. He has given it the peculiar title of numeric method, under which it has attracted well-merited notice. In recounting the symptoms of disease, and the appearances on dissection, he furnishes trustworthy materials for forming conclusions, and recent conclusions are worthy of confidence because the product of simple induction. Thus he found that phthisis almost invariably commences with tubercles in the upper lobes—that it is more frequent among women than men—that pneumonia is more easily resolved in tuberculous than in sound lungs—that simple bronchitis commences at the base of

the lungs, and follows a course the reverse of phthisis—that chronic peritonitis indicates tubercles in the lungs—that tubercles are scarce ever found in any other part without being at the same time in the lungs—that acute affections, occurring without complication, mostly seek one side of the body, or are limited to one part of a single organ. But he expresses himself more accurately. He obtains the results that two out of three fatal consumptive cases exhibit hemoptysis; that women are more subject to hemorrhage than men, in the proportion of three to two; that in typhoid fevers diarrhœa occurs in twenty-nine out of thirty cases, ulceration of Peyer's glands in five cases out of six, and that changes in the mesenteric glands are a constant symptom.

In this manner he has not so much made complete discoveries as shown the proportions in facts already known; he has not so much discovered new truths, as settled old ones conclusively. For this purpose he adopts the course pursued in mathematical and physical sciences. Like a meteorologist he observes the symptoms of the patient, minutes them, arranges them in a tabular form, compares them, deduces his results from the calculation, and the average number gives the new discovered truth. His examinations last an hour, and he investigates the visible remains of silent death with inexhaustible patience; not only the external form, colour, consistence of the organs are noticed, but with equal exactness the parenchyma is sliced through and carefully inspected. He opens the intestines with scissors, and allows them to pass through his hands from above downward; with close attention he examines every successive part, dictates the appearances, and allows nothing to escape him.

Such zealous honesty, which can never be sufficiently imitated, and which promises so much, does not however promise every thing. The numerical method increases the exactness of those results which we owe to the labours of good observers, as Sydenham, Boerhaave, De Haen, Stoll, Frank, when these were expressed in general terms, as “frequently” or “seldom;” but this accurate knowledge is limited to the observer himself, unless we can have the formalities of legal investigations applied to medicine. The numerical method assures us of the observations which have been made, but by no means assures us that nothing has been overlooked. It authorises us to draw conclusions from duly arranged numerators and denominators; but he who has the patience to count, has not always the talent to observe and to see correctly, or the tact to establish wide and generally useful conclusions.

TYPHOID FEVER.

If I do not greatly err, Chomel assigned its name to typhoid fever, after he had written on oriental typhus. Typhoid fever is now attracting especial attention in France, yet it is not easy to form a correct idea of its nature, or how extensively the term is to

be applied. Chomel takes a wide range, and includes in it all those forms of fever which have been represented as continued fever of inflammatory, bilious, mucous, adynamic, ataxic, or slow nervous type; in other words, as *fièvres continues graves*. Many other names are assigned to it, as *fièvre entéro-mésentérique*, (Pinel the younger and Serres); *exanthème intestinal*, (Andral); *dothinentérite*, (Bretonneau); *ileodichlidite*, (Bally); *entérite folliculense*, (by others); *gastro-enterite*, with nervous affection of the brain, (Broussais). In Germany the names of *typhus abdominalis*, and *febris intestinalis ulcerosa*, have been given to it. My object here will be to illustrate some of the results obtained by Chomel, most of which, it is true, are already known in Germany, and have been there subjected to examination.

The typhoid eruption, or *taches rouges*, the rose-red papulæ, appear mostly on the abdomen, sometimes sooner, sometimes later; are often indistinct, sometimes wanting; the last in sixteen cases out of thirty. Frequently they are so faint and so scattered, that an express search is necessary to find them. They are distinct from the proper petechiæ, as they can be removed by pressure; and distinct, also, from the *sudamina*, which appear with marked sweating, and are rather to be termed *miliaria rubra*.

The anatomical changes in the canal are the following: In the first stage of the fever we find enlargement of the glands of the mucous membrane. The glands of Peyer (not rather vesicles?) appear more closely set, and resemble large elliptic plates (plaques) granulated, more numerous in the ileum or jejunum, never in the large intestine. The glands of Brunner, more scattered, are also found sometimes enlarged, and then also in the large intestine. These plaques, from one to three lines in height, exhibit, on cutting through them, a yellowish white mass. The mucous membrane itself offers less alteration. The mesenteric or lymphatic glands always exhibit an enlargement.

After death in the second period, we discover ulceration of the intestinal glands. Those granulated plaques have disappeared, and in their place is found an excavation—a want of mucous membrane in these spots, or the membrane remaining in fragments. The appearance of these pits is waffel-like, reticulated, sometimes elliptic; their size is from two to three lines in diameter, their colour red or yellow from bile. They also extend deeper, and may even penetrate the peritoneal coat. Even the glands of Brunner may be ulcerated, which, however, is more rare.

In the third period or stage, when death has not supervened, follows cicatrization or healing by resolution. Besides these essential anatomical changes there are also accidental ones, partly in the alimentary canal, partly in other organs.

Respecting the treatment Chomel remarks, that no one method, even the rational, has adapted itself to the forms and periods of the disease, or obtained a decided preference to others in regard to the result. He goes through the old evacuating, antiseptic, exciting, stimulant, weakening, contra-stimulating, and antiphlogistic me-

thods. He then directs the treatment adapted to the different forms. In the inflammatory he advises strict diet, venesection, leeches ; in the bilious acid form, also, venesection, but not vomiting, and seldom purging ; in the mucous form, bitters and weak aromatics ; in the ataxic, tonic means ; in the adynamic, strengthening remedies, as cinchona, wine, camphor ; in the perforation of the intestine, large doses of opium and entire rest, (the English method of Graves and Stokes).

But this is only his theoretic rational therapia. He now employs, in preference to others, a remedy recommended to him by a pupil, (but first applied in Ireland by Reid,) the chloruret of soda. (It is our liquor natri chlorati. It is also found in the Pharm. Hanov. as Labarraque's liquor, with directions for preparing it, and for its employment as a disinfectant. Chemically, it resembles the chloride of lime. It is sometimes improperly translated in German as kitchensalt.) He gives this in the French manner, as a potion in sirop de gomme, about one and a half grains to the ounce, and allows sixty ounces to be used daily, ten to twenty-four drops in a potion, and the remainder, as far as possible, applied in other modes, as clysters, cataplasms, bathing, sprinkling the bed, and placing bowls containing the solution under it. He considers this as opposed to the tonic remedies, but does not express himself clearly in what class he arranges it, or how he explains its operation ; whether it is antiseptic or antimiasmatic, or whether the ulcer of the intestines is immediately cured by it. At all events it is distinct from the free chlorine in the aqua chlorata, which is recommended in Germany in abdominal typhus. He applies it only in severe diseases, and only in the first and second stages. The five first patients for whom he tried it were all cured, while among fifty-one others not treated with it, one of three died ; afterwards, among fifteen treated with the chloruret the deaths were two only. After this the proportion changed, and in spite of his application twelve of thirty-seven died, or one in three. Another method of treating typhoid is that of Piedagnel, who pretends to have controlled the severity of the disease by frequently repeated cathartics, by the operation of a glass of seidlitz water daily with strict diet. He has in this way lost but one in fifteen patients. This is confirmed by Delaroque, in the Hospital Necker. Fouquier, in la Charité, gives alum from twenty-four grains to a dram daily, in emulsion, in a julep, or in pills. Bouillaud terms his practice rational ; but, as an especial adherent of Broussais, places leeches in abundance on the sensible part of the abdomen. Here again we see the fault which is so often committed in French medicine ; it looks for a remedy for a given disease, and, disregarding the peculiarities of the case, is often unable to assign a reason why the treatment fails or succeeds.

Chomel himself must be willing to concede that he is not wholly clear in the comprehensiveness which he assigns to the idea of typhoid fever. In describing it he gives almost a complete pyretology. In his early essay "On Fevers and Pestilential Diseases,"

he came out as an opponent of Broussais. But Broussais himself says, that in this may actually be found a confirmation of his doctrine; that his adversaries, Chomel and Bretonneau, in their typhoid fever or dothinerite, have exactly described his gastro-enterite, with typhous symptoms, produced by affection of the brain, and that the circumstance of the mucous glands being especially prominent in their cases, is of little importance. But as Chomel has now determined to stand by his early defence of Pinel's essential fever, he makes the following distinction; that the glands of the mucous membrane do indeed exhibit inflammatory signs, but that the severity of this affection is not proportionate to the general symptoms; that there are cases in which no lesion of the alimentary canal can be discovered, (this is said also by Andral and Louis); that he regards the inflammation of the intestinal glands as secondary, and that the original disease may be a concealed affection in the nervous system, or in the fluids of the body. We see, therefore, what could hardly have been anticipated, Chomel labouring to escape the imputation of adherence to Broussais. But how vague the jurisdiction of typhoid fever every one must be sensible. For the rest, Chomel regards it as contagious; and in 1834-5 many young medical men sickened and died of this nervous fever.

ANDRAL.

The public are already acquainted with Andral's *Pathological Anatomy*, his *Clinique Médicale*, his *Essay on Vitality*, published in 1835, and at this moment his lectures are making their appearance. He was about thirty years old when chosen professor of pathology in the faculty. The large lecture-room is always filled, when he officiates, not with students only, but likewise with older physicians; and he always commands attention, when speaking in the academy. As his doctrines are peculiar, and constitute an epoch, they may be termed a school. Especially is he the man, who, although the author of an excellent compend of pathological anatomy, has divorced science from localism and materialism, and directed attention to vital properties. If the ancients generalised too much, and the moderns have carried localisation to an extreme, Andral has the merit of uniting the merits of both. He divides diseases into organic and functional. It is impossible, he says, to form to one's self a perfect representation of disease; but, however this may be, the solid parts and the blood are the inseparable elements, and, in turn, the cause and the effect of their mutual changes. Accordingly, he treats in his lectures first of the diseases of the solids, then of those of the blood. Of the former, there are five classes—diseases of the circulation, secretion, nutrition, innervation, and function. These, together, constitute the local diseases. Each organ reacts on each other, and the extension of disease is effected either through the circulation, through innervation, or sympathy, which last is not explained by the two others.

So much for his theory. But he is equally distinguished as a practitioner. As he does not so easily admit an inflammatory condition, he is more guarded in the employment of leeches. He is of opinion that the stomach may be the seat of a series of morbid conditions, not of inflammatory nature, and which, being of various kinds, demand various treatment; conditions which, not yielding to antiphlogistics alone, require narcotic means, tonics, excitants, antispasmodics—as rhubarb, gentian, cinchona, iron, zinc, bismuth. He has also, very properly, restored emetics and cathartics to their former consideration. He has proved, that the salts, calomel, jalap, aloes, and croton oil, are not so prejudicial as had been imagined in France. There is, in fact, even now to be remarked among the French, a certain naïve wonder at the operation of these articles, when they show themselves useful in headache, neuralgia, catarrh and suffocation, measles and scarlet fever.

He has also made numerous experiments with other especially new means. He employs chlorine in phthisis—with little effect indeed—iodine and hydriodic acid, iron and alkali. He also applies the contrastimulant method, with its large doses of emetic tartar, acetate of lead, nitrate of potass, aconite, digitalis. What is most worthy of remark, is the still increasing wonder of his countrymen, that the mucous membrane of the stomach and intestines will bear this treatment.

Let us once more briefly consider the present condition of French medicine and therapeutics. The French physician, who visits the bedside of a patient, treats him according to the following method: he first, with a perfect knowledge of anatomy, divides his body into the various systems of Bichat; admits, more or less, with Broussais, that one of these is suffering from inflammation; what the character of this is, what its seat, how great its extension and degree, he investigates with all his senses, especially by touch, and with the aid of auscultation and percussion, with a degree of accuracy in which Louis is a pattern; then directs abstinence, more or less mild remedies, antiphlogistic and revulsive treatment; and if death ensue, he investigates, by pathological anatomy, how far his diagnosis was correct, in conformity with the ample instructions of Andral, Curveilhier, and many others.

The part of the diagnosis which can be established by dissection, the recognition of organic alteration, is carried to a surprising extent. Its perfection springs out of their especial fondness for post-mortem examinations. On these examinations reposes all the pathological anatomy of the French. They have little interest in preparing perfectly and preserving pathological discoveries or representations of normal anatomy. Neither the museum of the school of medicine, nor the Dupuytren museum, founded the last year, is yet sufficiently extensive. Their materials are fresh cases. Their great object is to see structural changes immediately connected with the history of the sick, for the attainment of which, the numerous deaths in so large a city, and the little opposition made to their being opened, afford abundant opportunity. Their sense,

however, of the importance of collections, which afford a general view, which preserve singular cases, and make the more frequent, at least in part, more evident by careful demonstration, is proved by the Dupuytren museum, to which Orfila, the dean of the Parisian faculty, is still preparing a rival at Clamart, the great place of dissection at Paris. Skill and exactness in opening bodies can hardly be carried farther than they are in France. Though we do not find that the knowledge of normal anatomy is greater among Parisian than German students; although in their preparatory exercises they trust too much to themselves, or to their manuals, of which that of Hippol. Cloquet is most approved; and although the applications, especially that to surgery, are neglected, yet have they the advantage in pathological anatomy. Their claim to the invention of those useful instruments, the rachôtome, the enterotome, &c., is well known. A body is sometimes opened in front, sometimes behind or on the side. Thus, in a patient who died of scarlatina, with angina, the head was divided from above downwards, to the breast and thoracic viscera; and in a case in which urethritis had existed, the pelvis and the urinary organs were opened sideways, and the urethra and bladder neatly slit up.

The treatment, the ultimate object to which all this medical science should be considered as auxiliary, appears in France to be in a great measure subordinate to it. That the doctrine of Broussais admits almost no internal remedy, is well known. The English long since said to the French, that they permitted their patients to die, while the French charged the English with killing theirs. When you hear the prescription in a French hospital, you are astonished equally at the severe regimen and the absence of medicine. A quarter of a portion, a loaf, a soup, decoction of rice, syrup of gum, frequently form the nourishment, or rather the vehicle of the remedy. Then there are regular potions, tisanes, liniments, decoctions, cataplasms, pills, frequently bearing the same name in different hospitals, while their ingredients are varied, such as calming potions, potions béchiques, spasmodic potions, &c. Remedies which do not demand a small or very exact dose are taken in the form of a particular drink. The patients are kept so low, that those with chronic diseases often entreat the physician, while he dictates his prescription for the day, for another quarter portion, or an additional loaf. Nay, they actually have often pain in the bowels, caused by hunger. The quantity of potions, too, which are administered, cause disgust, so that more cures are effected by this means and by hunger, than by the remedies employed. On the other hand, lavements of various kinds are in very frequent use—as purgative, laxative, astringent lavements, camphorated belladonna l., oxymel l. Since, as above remarked, each hospital has its peculiar compositions, it is impossible to follow the prescriptions without consulting Ratier's formulaire (*Formulaire Pratique des Hôpitaux Civils de Paris*). In this work will be found a large collection, a small proportion only of which are used at present, generally the mildest, and those which

have been tested by long experience. Every French physician is at least so much controlled by the doctrines which Broussais has so earnestly inculcated, that he always regards the alimentary canal as in an irritable state, and laments to find himself compelled to abstain from the more active internal treatment. When the neutral salts, or calomel, or opium, or antimonials, are used, it is commonly only by way of experiment, and the preference, which for a time is conceded to one, is soon transferred to another.

French pharmacy deserves much credit for its elaboration of the recent discoveries in chemistry. Medicine has availed of these also, and not unfrequently with good effect. In this, however, again appears evidently the great fault of French therapeutics. It seems, in fact, to spring out of a national defect in character—a want of comprehensive and enlarged views. The Frenchman sees the individual fact, but seldom remarks its relation to other facts, and can with difficulty imagine himself placed in a new combination of circumstances. As this is the cause why he finds it so difficult to form a correct idea of the peculiar traits of other nations, and why he is so little successful in forming friendships with foreigners and colonies in other lands, so is it among physicians the cause of a therapeutic defect. An impression which once takes possession of their minds, is applied to all cases of disease, without being modified to suit their respective peculiarities. Accordingly, they repeat the same general theories, and reapply the same remedy to the same disease, although circumstances may render it much less appropriate; and when, in estimating the effects, they find them not always favourable or unfavourable, they mistake or overrate some new recommendation, and readily change one mode of treatment for another.

It would seem, farther, that they not only overlook treatment in their zeal for diagnosis, and lose the special in the general character of the disease, but that they too often forget the person of the patient; they work rather for the conquest of the disease than the restoration of the individual; in fine, they neglect the general constitution of the body in seeking the locality of the affection. They will continue to draw blood from their pale and starving patients, when a more rational view would teach them so to direct their treatment, as to counteract the debility of the whole system.

We may venture, then, to pronounce the opinion that French medicine stands distinguished in anatomico-pathological diagnosis, but falls behind in therapeutics. It is evidently at this moment neglecting the end for the means, or, in seeking its end, has in view the disease rather than the patient.

RICORD'S EXPERIMENTS AND PRACTICE IN THE HÔPITAL DES VENERIENS.

Few medical travellers will visit Paris, without seeing Ricord in his service at the Hôpital des Vénériens, where he so willingly

communicates on the subject of his new observations and his surprising experiments. As the accounts which he has given of these are scattered in separate journals, and a collection of them, under the title "*Mémoires et Observations par Philippe Ricord*," 1834, neither presents them complete nor accurate, partly in consequence of the want of full information in regard to them at that time, an abstract of his results will be given here.

These results relate to the syphilitic poison, especially as communicated by inoculation; to blennorrhœa from the parts of generation, the diagnosis of which has been much improved by the use of the speculum vaginæ; and to the treatment.

Inoculation with matter taken from syphilitic ulcers, bubos, or discharges from mucous passages, has thrown much light upon the dark points in the nature of the disease. It is performed on the same subject in another place, best on the inside of the leg, and the occurrence of a pustule, its course and form, determine the nature of the affection. Ricord takes pus or purulent mucus, and inserts it with a lancet under the epidermis. Twenty-four hours afterwards appears a slight redness and rising of the cuticle; the second day the point is still more prominent, is surrounded by an areola, and assumes the conical form of a small pimple, with a dark point of dried blood on the extremity, the effect of the inoculation; the third day, the epidermis is distended, with a little semi-transparent yellowish serosity, and forms a pustule; the fourth day, this assumes a rounded form, the black point is sunken in like an umbilicus, the areola gradually loses its lively red; the fifth day, the circumference of the base of the pustule is somewhat swollen and hard; the sixth day, the matter thickens, and the pustule dries under a crust which forms concentric layers. This crust remains a longer or shorter time, and, when it falls off, exhibits an ulcer, which has all the characters of a primary syphilitic sore or chancre. There were generally three insertions made, and either all took or none, never one alone. If they go on, and form in the manner above described, they prove the syphilitic character of the primary sore; in the opposite case, they prove either its non-syphilitic nature, or that the infection has become a lues secondarily or consecutively. Inoculation has shown that, after five to seven months, chancres and bubos still retain their syphilitic character. As matter of infection, was taken the discharge from chancres on all parts of the generative organs, in both sexes; the matter of urethral blennorrhœa; the discharge from the vagina, uterus, and anus; from bubos in various stages; from papulæ, pustules, tubercles, and ecthymatous eruptions; from sores of the cervix uteri; of the lips, cheeks, throat; of carious bones; and of various morbid growths. On the other hand, venereal subjects were inoculated with the matter of scrofula, herpes, acne; with the discharge of cancer and of gangrene. Ricord considers chancre a perfectly characteristic symptom of syphilis; as decisive and as specific as small-pox or cow-pock. It comes from a specific virus, the action of which is uniform and regular, and can be reproduced at pleasure

by inoculation. The bubo following on chancre, is either sympathetic or idiopathic. In the last case, it is a gland chancre (ch. ganglionaire), identical with chancres, and can by inoculation produce a chancre again. Ricord has arrived at the conclusion that gonorrhœa has a distinct character; syphilitic infection produces only a sore; and if inoculated blennorrhœa takes the character of syphilis, there must be a concealed sore combined with it. Blennorrhœa never developes chancre. Farther researches, especially if instituted by others, promise more satisfactory and extensive results. The conclusions of Ricord are confirmed by A. Thompson, an Englishman, who for a long time observed with him, and shared and perfected his experiments. (See Lond. Med. and Surg. Journal, 1833, Oct. 26.)

At the same time with Ricord, but independently of him, Wallace, in Dublin, carried on similar investigations and experiments. The accuracy of Ricord's observations has been called in question by Rattier, an externe of the hospital. He himself regards his investigations, as brought before the Academy of Medicine in July, 1833, as still inconclusive, and has not adopted them into the collection of his published works, above noticed.

Ricord has invented an excellent means of examining the female organs in his speculum vaginæ. It is a great improvement on those of Recamier and Lisfranc. That of Lisfranc is a simple hollow cylinder; that of Ricord is a cylindric instrument, of copper covered with tin, which is split lengthwise, and by means of a joint in the middle, allows the front and back edges to separate and come together. Two handles keep it in place, and a screw determines the degree of separation. In the application of this instrument, one is taken by surprise on discovering that a complete examination may be made of the internal female organs. The whole vagina, and the mouth of the uterus, are by it brought plainly into view. In the bottom are often found ulcers remaining, although those in front were healed, or excoriations, fungous growths, and enlarged mucous glands, which kept up the discharge, or it is ascertained that blennorrhœa of the uterine mucous membrane exists. On Tuesday, which was at once the day of reception and of *polyclinique* for women, might be seen in the Hôpital des Vénériens, the application of the instrument to thirty individuals in a single day. They are laid on a high bed, near the edge, the feet sustained on two stools. While two fingers hold open the labia externa, the speculum, covered with cerate and closed, is introduced lightly and quickly, unless great sensibility or a hymen prevent. There is seldom any pain felt or even pretended. The two handles are now pressed together in front, so that the opposite ends separate and discover the canal. A light is held before, and the spectator sees the os uteri as plainly as can be desired. If menstruation is present, the discharge is seen exuding by drops from the slightly swollen and reddened os tincæ; an occurrence on which Osiander, who accidentally witnessed it in consequence of a procidentia uteri, congratulated himself as a

rarity. Deviations from a healthy state are often detected in this way, and it is not only easy to determine their character, but to apply remedies, to make applications solid or fluid, and even, by means of a peculiar syringe, to throw injections into the uterus.

Treatment.—In primary ulcers, Ricord touches the sore with caustic, in order to change its character to that of a simple ulcer. Mercurial means constitute the favourite practice in cases where obstinate sores refuse to yield to other treatment. An unusual hardness of the edges is the usual precursor, when secondary symptoms are to be developed. Ricord imagines that quicksilver proves a specific in a number of cases of secondary symptoms, but that it rather removes the effects than the cause. Some cases prove wholly intractable without mercury. Those cases, in which mercurial means are indicated, heal by these means more quickly than by any others, though generally capable of being cured otherwise. In secondary syphilitic symptoms, mercurial remedies form the rule, antiphlogistics, sudatories, revulsives, the exception.

In consecutive affections, he gives the proto or deuto-ioduret of mercury. He considers mercurial salivation as a consequence of a peculiar inflammation of the palate, tongue, and gums, which he terms mercurial stomatitis. The salivary glands are attacked only secondarily. There is both an acute and a chronic form, and on the last he lays particular stress, as it may interchange with syphilitic affection and with mercurialism, of which last it may often be the commencement. In bubos, he applies poultices of iodine, and has made some successful trials with blisters. In gonorrhœa, which, according to him, as above mentioned, is not identical with syphilis, he first commences with antiphlogistics, then gives cubebæ and copaiva, then injections of lead, zinc, (acet. zinc 3j. aquæ 3x.) or lunar caustic (nit. arg. gr. j. aq. 3j.); warts are removed by the scissors, and excoriations behind the glans after gonorrhœa are destroyed with potass. In the blennorrhœa of women, he makes injections of nit. arg. gr. j. aq. 3j.; but as these seldom penetrate sufficiently, he applies lint, soaked in a solution of acet. plum. 3ss. to ℥j. water (eau blanche), and in chronic cases of double this strength. This mass of lint is renewed daily or twice a day; but if the mucous membrane of the vagina has a pale relaxed appearance as of unsound granulations, he applies in the same manner a mixture of eight or twelve parts of water to one part of the liquid acid nitrate of mercury; (R. hyd. nit. 3j. ac. nit. 3j. M., which is a caustic solution applied by Jules Cloquet and Recamier to ulcers and to cancer,) allows it to remain from ten minutes to an hour, and then substitutes the above leadwater.

Sometimes, after introducing the speculum, he touches the excoriated parts of the uterus with a sponge, moistened with the above caustic, and fastened on the end of a staff. In blennorrhagy of the uterus, when a large amount of tenacious, glassy mucus comes from the os uteri, he makes injections of the acid mercurial solution into the uterus. He uses for this purpose, a peculiar syringe which contains two fluids. He injects the solution first to

the amount of about a tea-spoonful, allows it to remain a minute, and then sends in warm water. The injection first creates heat and slight pain in the part, which pass off without ill consequence. The majority of three hundred patients thus treated, required three injections in eight days. With this plan Ricord has been much pleased. If the mucus is small in quantity, thick and tough, this is not always to be considered disease, as it may happen through catarrh. The speculum shows the redness of the os uteri, but this colour is not necessarily morbid, especially when the parts are distended by the instrument, as the lips of this organ are always red within. Small syphilitic sores or granulations on the os uteri easily bleed on being touched, and must, therefore, be discriminated. The *carunculæ myrtiformes* must not be confounded with fungous growths. After syphilitic affections of the throat, there may be some sensibility of the part for years, which is not to be removed. Removing the tonsils is useless, and is sometimes followed by increased secretion of mucus. Men of anxious temperament, thus affected, always consider themselves sick.

He terms the lighter form of discharge, *blennorrhœa*; the severer, *blennorrhagia*; the severest is the folliculous *blennorrhagia*, in which the mucous glands are hypertrophied. A *blennorrhœa* may be contagious, that is, communicate the same disease to another individual. The view taken by Ricord is, that many individuals have little susceptibility, or that two can accustom themselves to the disease in each other, so that a communication takes place once, and nothing follows afterward. This he calls *acclimation*. When two persons are physically uncongenial in this respect, you often hear him give the advice to change husband, or wife. On Tuesday, numbers of women come to him, perhaps preparatory to marriage, to convince themselves by means of this famous speculum of their own freedom from disease; and on Saturdays, men attend in the same view. Among them are persons who cannot be made to believe that they are not affected with syphilis; they labour under *syphilomania*. How far the speculum *vaginæ* is applicable to private practice, each one can judge for himself; but its use is very instructive.

PHRENOLOGY AND ORTHOPHRENY.

It may be a matter of surprise, that phrenology, which first made its appearance in Germany, as *cranoscopy*, or the science of the skull, and was afterward taught and discriminated by Gall and Spurzheim, in France, England, and America, should have been wholly given up in its native country. This indifference is the more remarkable, when it is considered that many other German notions, of much less plausibility, find favour and success at home. The history of the extension of this doctrine by Spurzheim, is such as would reflect credit on the soundest science. In Paris, London, Edinburgh, Dublin, and afterward in America,

which he visited, he overcame powerful opposition and gained distinguished adherents.

There is in Paris a phrenological society, which counts at least Broussais, Andral, and Bouillaud among its members. In England there are several, and one in London, having Elliotson for president, while Carmichael in Dublin, and Mackintosh and Combe in Edinburgh, profess themselves believers. The society in Paris publishes a journal, the "*Journal de la Société Phrénologique*," conducted by a committee, the chairman of which is Dr. Gaubert, and Dr. La Corbière is editor. This has now reached its fourth year. Broussais, this very year, has delivered lectures on phrenology, at which the number of auditors was so large that the hall could not contain them. There must, therefore, have been more than fifteen hundred present.

Phrenology now is no longer the simple doctrine of Gall, from which we derive benefit only for the anatomy of the brain. While it holds out as its object the anatomy and physiology of the brain, in their relation to the soul, it is at the same time a physiological doctrine, and a philosophical system. As a physiological doctrine, it rather explains the anatomical condition from the phenomena of the soul, than determines the physiological phenomena from the organic constitution; but, at all events, it arrives at its conclusions by collecting particular facts. The doctrine has the peculiarity, good or evil, that it is sufficiently popular, attractive, and intelligible, to amuse and interest the mass. Ladies are zealous phrenologists, and you find in London many a parlour ornamented with a phrenological bust. It is not, indeed, applicable to any practical use in common life, because, as its partisans freely admit, it is not sufficiently complete. It passes from anatomical structure immediately to mental phenomena, without especial regard for physiology. Whether it contributes any thing to medicine, especially to the pathology of the nerves, while it opposes itself to the physiology of the nervous system, now so zealously pursued, is a question.

Joubert, in Lyons, published a book in 1835, under the title, "*Prodrome d'une Nouvelle Doctrine Médicale*," and in this is found the following account of it. According to him, each apparatus (appareil) in the body consists;—1, of a part of the brain, which furnishes all that there is in its functions of the intellectual or instinctive character; 2, of a part or several parts of the spinal marrow; 3, of the external organs. In applying this to the respiratory apparatus, he makes this to consist; *a*, of a place in the brain, a cerebral organ, which suggests the necessity of breathing, and judges of the quality of the air in contact with the nostrils; *b*, of the part of the spinal marrow, from whence the respiratory nerves take their rise; *c*, of the external organs of respiration and circulation. He places this cerebral organ in the cerebellum, and terms it respirability. It is evident that in this way the two doctrines are not destined to coincide.

The Parisian school, however, admits at present in all, thirty-

seven mental peculiarities, and cerebral organs to correspond. These are either affective or intellectual. The affective consist of eleven propensities (*penchans*), and twelve feelings (*sentimens*); the intellectual of twelve percipient (*perceptives*), and two reflecting (*réflectives*). The Edinburgh school varies this arrangement.

Materials for the improvement and confirmation of the science are furnished by investigation of certain well known characters, distinguished for good or for evil, and whose peculiarities are matter of history. We find it announced, in connection with the organ of firmness, "great in Gregory VII., Charles XII., Richelieu, Napoleon, Casimir Perrier, La Mennais;" under veneration, "great in Robert Bruce and Raphael, wanting in Dr. Hette, great in Walter Scott, Benjamin Constant, La Mennais, Lamartine; little developed generally in the French;" in form or configuration, "great in George III.," whose remarkable recollection of persons is well known. Sometimes an impartial investigation discovers a coincidence with the occupation of the individual, but not always. The science, however, does not profess to be perfect, and even the busts and heads exhibited are not all perfect examples. Some years since, M. Voisin commenced the application of his art to the living. In 1828, he obtained permission to pursue his investigations at the Bagnio at Toulon. He found there three hundred malefactors, thieves and murderers, mixed; but among them were distributed twenty-two condemned for rape, and his undertaking was to discriminate the last. Silently and before four witnesses, he felt for the organ of philo-progenitiveness in the back of the head, and thus detected, not indeed all the twenty-two, but thirteen of the number. There remained nine, in regard to whom he had deceived himself. The result, with which he might reasonably be contented, is published in the *Jour. Phren.*, for Jan. 1835.

Orthophreny.—Although, as above remarked, phrenology is hardly ripe for application, one individual has been found sufficiently confident and enterprising, to apply it to the education and treatment of those depraved in mind. Felix Voisin has had, since 1834, an orthophrenic establishment, where by moral means, both internal and external, he attempts to do that for the understanding, for the development of the affections, and for the correction of dangerous propensities, which others have done for (other) personal deformities. Thus far he promises only, but has brought nothing to pass. He divides the children, who require orthophrenic management, into two classes:—1. Idiots (*enfants nés pauvres d'esprit*) with a conformation of brain below the usual average.—2. Children with sound cerebral organisation (*nés comme tout le monde*), but whose minds are perverted by defective or false education.—3. Those with unusual organisation (*nés extraordinairement*), in whom a disproportion exists between the good and the bad propensities, which he raises or depresses in their organs.—4. Children with propensity to alienation, to mental perversion, and to other nervous diseases, especially through hereditary influence. He has adopted in his own sense the expression of Descartes, "that if it

is possible to perfect the human race, the means of so doing are to be found in medical science." He is the physician of epileptic and idiotic children in the Hospice de la Rue de Sèvres, and has a private insane institution in Vanvres, while this orthophrenic institute is situated at Issy, fifteen minutes' walk from Paris. Last year it contained from seven to nine individuals. He says, that he places his establishment next to that of the Abbé de l'Épée. That such an establishment should meet with opposition was to be expected, and accordingly it has been denounced by the celebrated Le Mercier, in the academy of sciences. Others, again, agree with him.

As a philosophic system, phrenology is not exactly to be termed materialism; it should be regarded only in a psychological view, and, thus viewed, is not without value as a means of collecting observations. It stands on neutral ground in the eternal contest between body and soul, at least so far as to embrace the termination of the corporeal, and the first commencement of the spiritual. One thing must be conceded to the phrenologists, that none better explain the otherwise inexplicable difference of opinion, when similar arguments on both sides are presented to all; how the same array of evidence may produce acceptance and rejection, belief and disbelief. They point to the organs on which depends the disposition to both; it is with them organic conviction, organic doubt; if this view of the subject is repelled, they point again to the organs of the two opposite propensities; it is still organic credence or organic scepticism.

In reflecting on the soul and the brain, we have at least no other organ or means for the purpose, than precisely these. So with our eyes we can see all else sooner than the eye itself, with a hammer we can strike, but not the hammer, and Archimedes acknowledges that, in order to move the world, a point must be found exterior to it.

CHAPTER IV.

ENGLISH MEDICINE.*

Character of English medicine—Application of mercury, venesection, purging—Other therapeutic views and practice—Influence of climate—Rheumatism of the heart—Hay fever—Bathing places—Quacks—A letter; the opening of a mummy—Homœopathy in England—Oxford—Sea sickness.

A little philosophy adopts prejudices, a fuller philosophy rejects them again. One seems to meet these words of Bacon every where

* In this chapter, as also in the sixth, I have made such use of a journal, which my father kept during a visit to England and Scotland, in 1814, as my purpose to present only what was new would permit. That the materials of that journal were then prevented, by unfavourable circumstances, from being presented to the public eye, is a subject of unfeigned and deep regret to me.

in England. They seem to form the fundamental axiom of English medicine, which less than any other forgets its practical purpose; which rejects every thing that partakes too much of theory, or that contains more theory than experience justifies and practice renders necessary. Hence the English are excellent cool observers of whatever is a subject for observation. But while they aim to draw only immediate and necessary conclusions, they reject that part of medicine which does not admit of these conclusions, and yet is deserving of further examination. They cultivate, as it were, only the tractable soil, from which they can derive an abundant harvest, neglecting wholly the more ungrateful and difficult tracts. The field, which they thus leave fallow, is that of speculation; but, as far as that of practice extends, there are no better observers, no better describers, and no better managers of disease than the English. As this, however, is not all, they must still be regarded as defective in their medicine, while it is harder to find any fault with their surgery.

If it was remarked of French medicine, that the therapeutic department falls behind the others, we must here say, that the cure is especially kept in view as the most important object, and that they are eager to reach it by the shortest route. The few theories, which the English have had, were the three of Scottish origin, of Cullen, Brown, and Darwin. Cullen's theory was properly, as a whole, rather a systematic order of diseases; the two others together, have never taken such deep root in England, as the Brunonian alone in Germany. Besides this, the great merit of English medicine consists in the application of facts to practice. Sydenham's practical experience, the inoculation of small-pox, the discovery and application of cow-pock, cinchona, calomel, colchicum, the use of citric acid for scurvy, and various other therapeutic experiments, establish their claims on this score. This direction of their energies grows naturally out of the national character of the English. The philosophy of their own Locke exhibits every where a sound logic. Bacon urged the acquisition of knowledge by experience, and Jeremy Bentham is recently extolling the principle of utility. Even now, we can remark in English medicine no dominant theory. The English are careful to distinguish accurately what they can expect to find by their researches. This cannot be better expressed, than as Abercrombie terms it, when he advises to seek "the generality of a fact." They collect cases, and thence deduce conclusions. Their literature places diseases in view in distinct treatises, and these monographs, which are compiled from single authenticated cases, form together a whole, resembling a gallery of excellent paintings. The descriptions of disease by English writers are true to nature, clear and unembarrassed; their short reflections are striking and appropriate, and they go directly to the point. Their value will readily be appreciated by any one, who has had occasion to study a scientific subject in foreign authors. The practical physician finds in them trustworthy, and, what cannot be said of our

German literature, which is rendered uncertain by differences and dark by illustration, truly refreshing studies and guides. These are traits which the author confesses so captivated him, that he should have been tempted to inordinate commendation, had not the judgment of older observers, and a second reading of the remarks of Steiglitz, which terminate the second volume of his pathological researches, "on the peculiarities of English medicine at the present day, and its influence on nervous fever," brought back to his recollection the worth and the necessity of prudent speculation.

The pathology of the English rests in part on physiology and anatomy with the associate sciences, but principally upon therapeutics, which form not only its aim and object, but literally its basis. English medicine does not reason both forwards and backwards; it forms conclusions *ex juvantibus et nocentibus*; it is a science which is resolved to become wise by experience. Pathology in its whole range is not well treated by them, but for the management of particular diseases and symptoms, the English have rendered great service to medicine. Hence, while their general therapeutics are confessedly open to criticism, their special therapeutics are in many instances excellent.

In lecturing, the teachers adopt as the basis of their arrangement the nosology of Cullen, or that which is given in the Study of Medicine, a very clearly written and much esteemed work of Mason Good, or that contained in Gregory's *Conspectus Medicinæ*. But as there are no leading speculative views, and as the doctrines of single schools are not made public, it is not possible in describing English medicine, as may be done in regard to that of other countries, to observe it from general points of view. Cases, monographs, and individual views, must all be separate and distinct. The conclusions and deductions which are made are so short, that they seem like threads not long enough to be woven together to form a texture. In reviewing English medicine, there is no pathological doctrine to illustrate, as in France, but certainly more therapeutic means to mention. Accordingly, in place of theories or methods, we have to remark in this connection on three leading therapeutic means, mercury, purging, and blood-letting; and these may be considered a little more at length.

It is not easy in English medicine, to find out the precise virtues of remedies, their *modus operandi*, or the grounds on which they are selected. Frequently the principal reason given seems to be, that the remedy has done good in other cases, and therefore it may be expected to do good in this.

Mercury is given either in large or small doses, and its use is to be distinguished accordingly. In large doses, the only preparation employed is calomel, in small doses the protoxide in the form of blue pills. Of the use of large doses of calomel, I find a full discussion by Robert Graves, in the Dublin Physical and Chemical Journal, No. xvi. Dr. Graves is a physician of the new English school, of high character as a lecturer, practitioner, and critic.

He recommends the medicine, whatever may be the seat of inflammation. According to him, blood-letting takes the first rank, and calomel the second, in the treatment of inflammation. He gives it in the dose of a scruple, twice in the twenty-four hours, or according to the urgency of the symptoms. The object is to mercurialise the system, so as to effect a change in the capillary circulation and the secretions. This treatment demands certain precautions. The patient must take no cold drink, but every article warm; oatmeal gruel without lemon juice is the ptisan which Dr. Graves recommends, and of which the patient must take but three pints daily, because excessive drinking overloads the stomach, and produces mercurial diarrhœa. In most cases, he regards the use of mercury in small doses as injurious, and rejects as dangerous the treatment with blue pills. According to his observations, salivation, in place of augmenting the fever, has the contrary effect. He can assert, he says, that if the fever is occasioned by inflammation, as by pericarditis, pleurisy, &c., calomel will, nine times in ten, at the commencement of salivation, produce a marked diminution of the inflammation and retard the pulse. He has never seen any evil consequence follow upon calomel, in those cases where its use has caused a sudden and complete disappearance of severe inflammation. The same remedy cannot be at once useful and injurious to the constitution of a patient. If the mercury relieves the inflammation, it causes no detriment to the animal economy.

The confidence in large doses of calomel in inflammations and congestions is great and extensive. There are few individuals who have not at least once been thus treated, yet few voices are raised against the remedy. Its use threatens to be somewhat curtailed by the late non-mercurial treatment of syphilis, which, since its adoption by Carmichael, finds many adherents. I find, however, upon enquiry, that this new practice is not followed in the large London hospitals, neither in St. Bartholomew's, nor St. Thomas's, nor Guy's, nor the Lock hospital, nor yet in Stephen's at Dublin. In all these calomel and opium are administered.

Some explanation of the principles of the mercurial treatment is given by Wilson Philip, "On the Influence of minute doses of Mercury." London: 1834. His immediate purpose is to recommend the use of small doses, but the work also contains a physiological view, and a rational account of its *modus operandi* in general.

According to this author, the operation of mercury is twofold, local and general. The general operation on the whole system takes place partly by means of the nerves of the part to which it is applied, partly through absorption and circulation. By absorption, it exerts the greatest influence on distant parts, because it comes in immediate contact with the various organs, and acts directly upon them, more or less as a stimulant, exalting their functions. To the alimentary canal and the salivary glands, it is also evidently a stimulus, even when applied to the skin, and this

irritation may pass into inflammation, if not immediately relieved by increased secretion. Thus, mercury, along with its stimulant, exerts also a demulcent operation. But by this power which mercury possesses of promoting various secretions, we can effect only a transient and imperfect relief, for a check of the secretions is but a secondary effect of the disease. It must, therefore, have another effect, and this is exerted upon the liver. On this organ, the remedy not only has a specific power to exalt its functions, but also to correct various functional abnormalities, and to affect the structure of the organ itself, in a degree in which it can act on no other organ, and in which no other remedy can act upon this. Now the sympathy between the stomach, liver, and duodenum, is so great, that whatever benefits or injures the one, must affect the others in like manner. Again, whatever affects the digestive system, must have an influence on the disease, for scarce a deviation from health occurs in which these parts are not concerned. Farther, one of the great causes of the influence of the digestive system, is its sympathy with the brain. This directly influences the action of the heart and its vessels to their smallest ramifications. The discerning and assimilating processes are entirely dependent on it, and on the spinal marrow. If such are the conclusions we obtain respecting the use of the liver *à priori*, they are abundantly confirmed by observation. In the most important diseases, local and general, the function of the liver is more or less disturbed, and on the condition of this organ the treatment indicated more or less depends. Hence it happens that in warm climates, where the sympathies are so active, affections of this viscus are a leading circumstance in acute and chronic disease. Dr. Philip has, consequently, for many years adopted the custom of examining the region of the stomach and liver, in every case, as carefully as the pulse.

The operation of small doses frequently repeated is, according to Wilson Philip, of great practical importance. According to his experience, the quantity of quicksilver usually given, however useful the article may be occasionally in large doses, is, on the whole, at least ten times greater than is necessary to develop its beneficent operation. Its favourable influence upon the liver has enabled physicians to give it in too large quantities. He explains the innocence of twenty and thirty grain doses of calomel, by the rapidity with which they are conveyed out of the system. Of the united stimulant and reducing powers of mercury, the former preponderates in small doses, the latter in large. He now obtains decisive benefit from a single dose of mercury, as from a half to one eighth grain of blue pill. This is the protoxide, obtained by rubbing down the regulus of the metal with chalk. The methods of preparation are various, but the London process is the best. The hydrarg. oxyd. cinereum, which is so produced, contains of quicksilver 96.16 parts, of oxygen 3.84. Eight grains of blue pill contain three grains of the protoxide, of which the usual dose is one to three grains. But the full benefit of the medicine is said to be

realised in the small dose above mentioned. The cause of its powerful action, is the absence of aperient effects. It is fully absorbed into the general system, and, as it causes but slight irritation, is not eliminated therefrom. It is by maintaining this constant general influence, that it is made to work upon the gums and produce salivation, while large doses often fail. It must be remarked also, that one half grain of blue pill is estimated equal to one twentieth or one thirtieth grain of calomel, for one grain of calomel is equivalent in aperient and alterative power to ten grains of blue pill. Thus far Wilson Philip.

Salivation is, therefore, desired and kept in view by English practitioners, while we, except where peculiar views are adopted of the treatment of syphilis, always regard it as an evil. The East Indian physicians, however, are the greatest advocates for the mercurial practice; indeed, this Indian origin of the practice might be almost surmised, from the importance which is there attached to the liver. But the great authority for the use of the protoxide is Abernethy, who is especially celebrated for his attention to internal treatment in surgical cases. Abernethy exercised a very great influence on the surgery, and almost as much on the medicine, of his time. His great maxim was, subdue local irritation, and regulate the action of the digestive system, and you control all controllable diseases. It was well known that he was particularly successful in the treatment of chronic disease. His means for the purpose were to a great extent these same blue pills. Their reputation is that they do not disturb the stomach and bowels, that they operate gently, and "bring all in order again."

In Germany, we do not use this famous protoxide. The gray mercurial ointment is much recommended: but Plenck's merc. gummosus has vanished from the pharmacopias.

In close connection with the use of mercury is

The purging method.—When the English especially wish to mercurialise, they add opium to the quicksilver, but frequently the object is to move the bowels also, and then they leave out the opium. At the same time with Abernethy, a system of practice was adopted by James Hamilton, a physician and professor at Edinburgh, whose book on the use of purgatives, gained him many adherents. Among the extensive agencies which the English ascribe to mercurial remedies, it was natural that they should adopt them as derivative means; and in fact both calomel and blue pill are employed in this view. Sometimes, however, they employ other aperients, either in combination with these, or alone. They add salts, for example, in order to act on the intestines and kidneys, as well as the liver, and for this purpose often give calomel in the morning, and salts in the evening. The other aperient means are the epsom salt, with an addition of sulphuric acid, colocinth, castor oil, croton oil, rhubarb, and senna. To keep the bowels open is a leading maxim, and it is to be remarked, that in no country are the conveniences for this purpose so great, as they are found in a neat English water closet. English and

French medicine have, therefore, this in common, that both recognise the great importance of the digestive apparatus; with the distinction, however, that the latter takes rather a pathological, the other a therapeutical view of it; one regards it as the seat of the disease, the other as a medium, through which to act curatively upon it.

We farther remark how important an object it is to the English to promote the secretions, those of the intestinal mucous membrane, of the kidneys, skin, mucous glands, and liver.

Blood-letting.—As the great authority for recommending copious bleeding we may mention Armstrong, and we are assured that nearly three fourths of the English practitioners follow him. They hold the human system to be so constituted that it can bear a considerable loss of blood. They advise in attacking inflammation to withdraw the blood as rapidly as possible, and for that purpose to make a large opening in the vein. If the blood flows slowly, the vessels have time to place themselves again in relation to the diminished volume of this fluid, and therefore the intended “shock” to the whole system does not follow. In order to be sure of this, blood is drawn to commencing deliquium, and as this takes place sooner in the upright than in the recumbent posture, this circumstance is always taken into the account. Even in chronic inflammation, bleeding is much depended on.

Caleb Hillier Parry, in his *Elements of Pathology*, published in 1815, recommended blood-letting for almost all affections. This writer, however, has not obtained a great reputation in England. In consequence of the independence of the English of any leading pathological view, and of general pathology, many individual plans of practice arise which do not become general, some of which are extremely singular, and should rather be reckoned as curiosities. It is superfluous to say more on the subject of blood-letting. The latest writers on the subject, Marshall Hall and J. Wardrop, have been mentioned above, and the latter is still an enthusiastic partisan of the practice.

Mention must still be made of some peculiar circumstances in English medicine. Together with the above-named and especially debilitating remedies, other therapeutic means, intended to promote the restoration of the strength, seem to exist in undue proportion. The application of cinchona, of port wine and opium, which was so common forty years since, and to which C. Fisher alludes in his *Med. Chir. Remarks on London*, 1796, has indeed ceased to be carried to so great an extent. On the other hand, the invigorating treatment of the English practitioners now consists in giving nourishment, which both in quantity and quality surpasses that allowed to a patient in France. For light diet the patient receives in the hospitals a quarter of a pound of meat, a half pound of bread, and a half pound of potatoes; for fever diet, tea morning and evening, and at noon a half pound of bread, or an allowance of sago. Sometimes beef-tea is also permitted, which is a weak broth prepared from the infusion of beef cut in small pieces; chicken-tea is a still weaker

preparation. The medical means for restoring the strength in "typhus mitior" or "gravior," are more limited than in Germany. The English have in fact many authorities for bleeding in these affections, especially Armstrong. But when the object with them is to support the system, they give more stimulating, or, as they call it, antispasmodic articles, than our nervines. Although they do not reject valerian, arnica, and serpentaria, they prefer giving wine, quinine in place of cinchona, musk, ammonia, the ethers, opium, and, what is original with them, arsenic as a tonic. Camphor can hardly be reckoned among their stimuli, for camphor mixture is often chosen as a vehicle for other medicines. They make little use of the laxative extracts and neutral salts. Among the remedies peculiar to them may be mentioned the famous James's powder, which still maintains its place as an unexplained preparation of antimony, carbonate of iron, oil of turpentine, chlorine, cold applications. Great influence is also ascribed, and with reason, to traveling; and change of air is a prominent remedy of the English physicians. Some new medicines have been particularly tried by Elliotson, formerly at St. Thomas's, now at the University Hospital. He has used creosote in phthisis and epilepsy without effect, but he regards it as decidedly soothing in rheumatic neuralgia not of inflammatory character, in hysteria, and palpitation. It removes nausea, and prepares the way for other remedies in enteritis and colic: in diabetes it promises something, and has acquired reputation for external application to relaxed ulcers. Iodine has been praised in affections of the glands, and in secondary syphilis with mercurial symptoms, or in a state in which it is difficult to discriminate between the two affections, it is evidently and peculiarly beneficial. Within a few years the water-proof caoutchouc has been employed to form what are termed water-beds. The water is in place of a bedstead. On it lies the caoutchouc stretched and floating, while the patient is on a matress, prevented from galling by the ease with which he turns and by the coolness. In the London Hospital from seven to eight such beds have been in use for four years; they cost six to eight pounds each.

Not a little attention has been attracted to Stevens's researches on the blood, his suggestion that the red colour of arterial blood is not due to oxydation in the lungs, but to its containing salts, and his consequent treatment of cholera and other diseases by saline injections into the veins. His book has not thus far found much favour, though he is not wholly without converts. Besides him, Marsden has found this method effectual in restoring the circulation. The liquid injection is composed of muriat. sodæ 3 iij., carbon. sodæ 3 iij. ss., oxymur. potass. gr. xv., aquæ lb. iv. In children under fourteen, 32 oz., in adults 48 to 80 ounces are sufficient to restore the circulation.

I must once more notice the present direction of enquiry to the physiology of the nerves. Its application to pathology may be found in small memoirs of Sanders, Griffin, Teale, and John Marshall; in the larger and more important work of Travers "On

Constitutional Irritation," vol. ii., 1835; in H. Mayo's "Outlines of Pathology," 1835; and Marshall Hall "On the Nervous System," 1836.

Foreign medicine and the views entertained abroad are becoming better known in England. French practice is most esteemed, and much of it has been adopted. The journals contain fuller accounts of French literature, and it is common for physicians and surgeons to pass a certain time in Paris. Auscultation and percussion are becoming widely known, and form the subject of some original works by Stokes, Forbes, Williams, Hope, and Davies. Even the doctrines of Broussais are, not indeed wholly admitted, but yet, as by Stokes for example, more directly approved than elsewhere out of France, and their correct views at least are constantly extending.

German medicine is much less known. The difficulty of the language is complained of: those who have learned it in Germany easily forget it again: and even the classic works written in Latin are not regarded. This ignorance is now about to cease. Robert Graves in Dublin is known as being versed in, and a judge of, the medical literature of Germany. The latest proof, however, of the interest taken in it, is furnished by the appearance in 1836 of the *British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery*, published by J. Forbes and Conolly.

Medical pathological anatomy has been seasonably and attentively studied. Baillie, who was closely connected with John Hunter, laid the foundation; and Farre followed him. That it has not since been neglected is proved by the museums, and by its recent cultivators, Abercrombie, Bright, Hodgkin, Carswell, and Kiernan.

It seems proper here to take some notice of the climate and diet in England, especially as connected with the large doses in which the practitioners there give medicine. The luxurious vegetation and mild climate of England are well known, and might be suspected from the dark evergreen of her fields and shrubs, and from the success even of tropical plants in the open air. Another circumstance is the fogginess of the island, surrounded as it is by sea air and immersed in dampness from the same cause. These circumstances exert a very beneficial influence on the physical condition of the animal economy. Both animals and men appear well nourished. The sea air and labour sharpen their appetite, which is satiated on the strongest animal and vegetable food, so hearty and condensed that a continental European of the best appetite finds it immediately extinguished by their soups, their dishes of meat, and their malt liquor. An English constitution is, consequently, in its vegetative character, peculiarly massive, the digestive apparatus is, in regard to chylipoiesis, to assimilation, and to all its processes, in a superior condition; it can bear, and it requires, a decidedly active medical treatment. The frequent dyspeptic affections and complications make gastric management and depletion especially needful. Soda and seltzer water are favourite digestives, and the

above-named means are the remedies indicated. The large doses which appear so remarkable are thus accounted for, and extend themselves, as we shall see, fully to the gastric remedies. Epsom salt, for example, which is directed in our pharmacopeia in doses of a dram, is given in London practice to the extent of three or four. These influences of climate and diet appear still more evidently in other facts. Thus an Englishman on the continent experiences an excessive operation from his dose of neutral salt, but on his return home is compelled to return to the customary quantity, in order to obtain the usual operation; and a German resident in England requires perhaps a double dose of the laxative carried with him. During my stay in England, I made no trial of the kind on my own person. I regret that I had not then thought of instituting some experiments which could have been carried on without any inconvenience.¹ The same is true, however, of other remedies, and among the rest I have been able to observe this remarkable influence of climate and diet in the use of opium. Wine, too, is borne in much larger quantities, before it evinces its stimulating property.

It is these atmospheric and endemic circumstances which make England the land of gout, of gravel, of aneurism, consumption, rheumatism. If gout is rather found among the richer classes, rheumatism is far more frequent with the poorer. Labourers commonly carry a piece of sulphur in the pocket as a preservative against this disease.

RHEUMATISM OF THE HEART.

A disease of which you hear much said at present in England, is rheumatism of the heart. One may easily infer the frequency and the severity of rheumatism in this country, when he learns that the result has been here clearly attained that half of those affected with acute articular rheumatism have affection of the heart. Such cases occur particularly in the hospitals, because the class of patients there found are particularly exposed to dampness and to changes of temperature. The cardiac symptoms, however, are of a kind that easily escape observation, partly from the severity of the rheumatic pains in other parts, and partly because they are little regarded by the patient himself. The means of recognising the affection are furnished by auscultation and percussion, sometimes by these alone. It was in England that the connection between rheumatic fever and organic disease of the heart was first remarked by Pitcairn. The observation was confirmed by Dundas, Wells, and Odier in Geneva. Lately it has been noticed by Latham, Elliotson, Hope,

¹ During my last year's stay in England I have made at least one experiment of this kind. I prepared a dose of epsom salt and senna, (sal. amar. ʒj. inf. sen. c. ʒj. aq. font. ʒiv.,) and took one third part twice in the evening. It had some effect on the consistence, but none upon the frequency of the stools. I have since repeated the same quantity in Hanover, and always obtained a decided operation.

Davies, Abercrombie, Stokes, and Watson, and lastly in France by Bouillaud.

The nature of the cardiac affection consists in the series of organic changes, of which inflammation is assigned as the cause. The parts of the heart which, on dissection, exhibit traces of inflammatory action, are the membranous parts, as the pericardium after pericarditis, the external and internal surfaces of the organ after endocarditis, the lining of the ventricles, auricles and valves, and likewise the muscular substance which Bouillaud divides into two, the inner stratum which promotes the movement of the valves, and the outer which effects the contraction. If the external casing of the heart suffers, there follows effusion of serum, deposition, adhesion; the membrane is thickened, or becomes rough and shaggy on its internal surface. In endocarditis the inflammation is mostly limited to the valves, which become thickened and less transparent, especially the fibro-cartilaginous parts of the valvulæ mitralis and semilunaris, and most frequently exhibit wartlike excrescences, very similar to syphilitic condylomata. Hypertrophy is one consequence of the affection of the muscular substance; other consequences are mechanical, as distention. Such are the appearances discovered after death, which of course vary in degree, according as the fatal result follows sooner or later.

Rheumatism of the heart is called a very fatal disease, more on account of its eventual consequences, than on account of its immediate effects, or even the chronic and gradually developed organic changes. In most chronic diseases of the heart there is evidence furnished that the patients have first suffered from severe rheumatic fever. It is on this account that the importance of early discovering the extension of the disease to this organ is so highly estimated. Hence in acute rheumatism the chest must be daily examined, especially by auscultation and percussion, because this affection betrays itself to the ear rather than to any of the other senses. Some suspicion of its approach may be suggested by a strangeness in the manner of the patient, a wild, even sorrowful expression, without verbal complaint, a dirty gray complexion, and a tendency to delirium. On percussion, there is detected an unusually flat echo, and with the ear a peculiar morbid sound; the usual heartbeat is no longer clear, but mixed with a *to and fro* tone, an intermittent screaming as of a saw. This sound remains for some days after recovery from fever, then gradually ceases, or remains constantly, in case an organic heart disease is forming. It is ascribed to the rubbing of the dry and rough membrane of the pericardium. There is also a tone which indicates affection of the inner lining of the cavities, which is deeper, and dependent on the change of the usual relation between the ventricles and the openings of the vessels and auricles.

After this, other general sympathetic affections usually supervene, as palpitation, accelerated small or intermittent pulse, stricture in the epigastrium, short breath, anxiety, dry cough, pain in the cardiac region, increased by pressure with the fingers on the

interstices of the ribs, by deep inspiration, and by lying on the left side, stiffness and pain in the region of the left shoulder, and often under the left arm, breaking off shortly at the elbow or wrist. These signs are seldom all united; were they so, the diagnosis would be easy; hence auscultation, as its indications are constant, affords the surest signs and perhaps the easiest to recognise. Generally both morbid sounds are present, forming a double symptom; but the pericardiac sound is more frequently wanting than the other; pericarditis is more rare in articular rheumatism than endocarditis. It is also to be remarked, that in acute articular rheumatism, when heart affections occur, symptoms not unfrequently supervene which point to cerebral disease. In rheumatic carditis there sometimes occurs delirium or mania, or comatose phenomena or convulsion; so that inflammation of the brain is easily inferred, especially as metastasis is always regarded as a leading characteristic of rheumatism. Dissection, however, discovers no change in the cavity of the cranium, and by directing the treatment against phrenitis, the inflammation of the heart may be wholly overlooked. This happens not only among adults, but even in children. The treatment recommended may easily be imagined;—venesection, leeches to the præcordia, cathartics, mercury with opium pushed to salivation, colchicum.

In France, especially by Bouillaud, digitalis is recommended, particularly its endermic application, in the chronic form, or when the sound above referred to continues. It seems proper here to quote the views of the French on this subject; for it will be found, that rheumatism is only recently discovered to be the cause of heart affections, though the latter have been so especially studied by Corvisart, Bayle, Laennec, Bertin, Louis, Bouillaud, Andral, and Rostan. Laennec and Bayle were of the opinion, that pericarditis was very difficult to detect during life, and they acknowledge that while they have several times suspected it, they were not able to establish the diagnosis. Louis (de la pericardite) subjected it to especial investigation, and perfected the diagnosis by paying particular attention to the flat sound on percussion, and to the projection of the præcordial region, and uniting these symptoms to the commonly received one of pain, which is wanting in half the cases, of irregular, rapid, intermitting pulse, palpitation, dyspnoea, fainting, and œdema of the extremities. As respects the frequency of the disease, he has, according to his statistic or numerical method, examined the dissections recorded by Morgagni, and among them numbered 1263 cases, in which the condition of the heart was examined by dissection, and has among these found 70 adhesions of the pericardium, proving that at some previous time this membrane must have been inflamed. In the post mortem examinations made by himself, which are 443 in number, he has found the signs of disease of pericardium 18 times, or in one of 24 cases. I shall not follow farther his calculations, which, however, extend to the course, anatomical appearances, prognosis, consequences, and even causes. In regard to the causes, it should

be remembered, that he does not reckon rheumatism among them. This cause he did not happen to discover. From this an argument might be drawn that rheumatism, in France, is not so frequent, or so severe, or does not attack the heart; or the same facts might authorise the inference, that the numerical method affords no assurance that every fact is observed. When Louis wrote in 1826, attention had not been directed, in France, to this particular cause. Bouillaud, whose last great work on diseases of the heart appeared in 1835, has especial regard to rheumatism, and still more in a monograph, written in 1836, entitled "*Nouvelles recherches sur la Rheumatisme Articulaire aigu en générale, et spécialement sur la loi de coincidence de la péricardite et de l'entérocardite.*" He asserts that it is three years since he accidentally discovered the coincidence of carditis with acute articular inflammation. At all events, the English discovered it earlier. He makes especial reference to the signs derived from auscultation and percussion. He also found that in half the cases of rheumatic fever, the sero-fibrous texture of the heart, the pericardium, or the endocardium, was also affected during life. His treatment, as might be expected from a zealous Broussaisian, is strongly antiphlogistic. He lets blood to the amount of two to eight pounds; and applies leeches or cupping locally. His auxiliary means are blisters, fomentations to the joints, baths, opium, digitalis endermically applied, and strict diet. With this treatment, he reckons the average duration of rheumatism at one to two weeks, in place of six to seven. In regard to mortality, not a single case proved fatal out of 80 patients, treated in this manner, during four years, in his ward at La Charité. He explains both the rarity and the fatality of heart disease, as mentioned by the earlier writers, by supposing that the disease was never recognised, except in cases where it proved fatal.

HAY FEVER.

There is in England a national disease known by this title, a catarrh to which certain persons are regularly subjected in the months of May, June, and July, and which they ascribe to the effluvium of the hay. It is only lately that it has been regarded as an object of scientific attention. Dr. Bostock, in the *Medico-Chirurgical Transactions*, vol. xv., describes it under the title of *Catarrhus Æstivus*: he studied it for himself, and afterward taught it to others. He ascribes it to excessive heat. It is a catarrh with sneezing, headache, weeping, snuffing, and cough. Sometimes there is fever and general discomfort. It does not affect the poorer classes, but only the rich. Bostock finds that no remedy can be depended on, but that it vanishes spontaneously. He has tried with equal ill success, iron, opium, mercury, blisters, leeches, the mineral waters of Leamington and Harrowgate, Bath water, and sea bathing, privation of wine and meat, and an improved diet. He now limits himself to small blisters, mild purgatives, ipeca-

cuanha, Dover's powder, squills, digitalis, and cold. A cool residence near the sea is the best remedy. I have seen a case of this summer catarrh. It is singular, that it should attack the same persons for several years in succession about the same season.

WATERING PLACES.

On the whole, medicated springs and baths are not considered of so much importance in England as in Germany. They are both fewer and weaker; the bath-literature of the English is meagre. They have chalybeate water, saline water, sulphuretted water, and a few mineral springs in Scotland. The baths of foreign countries are more esteemed than their own, on several accounts. First it is the fashion, then they are more active, then cheaper, and lastly they involve a journey to the continent, which is held advantageous for many reasons. The old, celebrated, and beautiful Bath, is almost deserted. Cheltenham is most frequented in autumn, and Brighton in winter. These are the directions taken by the world of fashion, when the London season is over, and these are followed implicitly in their movements by the whole body of society in England.

Cheltenham lies forty-three English miles from Bristol, forty miles from Oxford, and nine miles from Gloucester, contains 26,000 inhabitants, and has grown up so quickly, that its population has increased eightfold in thirty years. The visit made to the baths by George III., especially brought it into notice. The saline fountains were discovered in 1716, by watching the motions of the doves, which show that there was some water which remained unfrozen in winter. By degrees all the medicated waters indigenous to England were found here united. Private persons erected accommodations for drinking and bathing, planted alleys and gardens, and the new houses which were built formed at last a beautiful town in a beautiful region. There are now five bathing establishments. They are termed in a general manner, Spa, a name applied by the English to all mineral fountains. The oldest is Old Wells, on the spot pointed out by the doves. The best springs are in Montpelier-Spa, in which name are united two of the most celebrated medical places. This establishment was founded in 1806, by Mr. H. Thompson, who was so fortunate as to find on his ground successively, eighty mineral springs, which he brought together by pipes. The Montpelier-Spa are of six different kinds, and are termed—1. Chalybeate saline—2. Strong sulphur saline—3. Weak sulphur saline—4. Simple saline—5. *a*. Iodine saline—*b*. Iron magnesian saline—6. Saline muriate of soda. All the Cheltenham springs contain salt, except the pure chalybeates. The strong chalybeate spring is the saline and chalybeate Spa in Cambray. The remaining two establishments are called imperial Spa and Pittville, which last is the most recent discovery.

The latest chemical analyses were made in 1832, by Cooper, and apply particularly to Montpelier-Spa. The results of this enquiry

may be found in Scudamore, "On the composition and medical properties of the mineral waters of England," 1833.

As abundance of water of the richest quality is present, it has been undertaken to crystallise the salt: this is done in a very large laboratory. The salt is allowed to settle in small wooden troughs, (if prepared for a hot climate, it is also permitted to effloresce,) then packed in glass, and offered under the name of real Cheltenham salts. They are sent over all England, and many visitors of the baths carry them away to complete their cure.

The waters are partly drunk, and in part used as baths. For the privilege of drinking during the season, one person pays £1 1s., a family £2 2s. The use of the walks and rides costs besides to each person 7s.

Among the baths the Montpellier are the best. In this establishment are twenty-five baths, fourteen warm. The warming is artificial, and is effected very quickly by connecting them with the laboratory above mentioned. A stream of water is conducted under this and comes in contact with a column of hot air, which raises the temperature of the water immediately to 180° Fahr. In this state it flows into a large receiver, from which it is drawn for use, while in the larger baths it is constantly in motion, always ebbing and flowing. The cold baths have a mean temperature of 56°; the largest cold bath measures twenty feet in length and ten feet in breadth. There are also shower baths, shampooing baths so called, douches, hot air and vapour baths. A common bath costs 1s. 6d., a warm saline bath 3s., a sulphur bath the same, and so on. The baths are open from 6 A. M. to 10 P. M.

There are in Cheltenham nineteen physicians, properly doctors of medicine, which is a large number for the population, and twenty-three surgeons, who also practise medicine; (vide chap. x. on English medicine, and its reform.)

Bathing life in Cheltenham has all the family and individual comfort which is usually seen in England. The principal or high street leads through the whole town, by-streets pass right and left, and conduct through alleys to the bathing establishments. The houses are mostly new, and look homelike and comfortable, as English houses always do. The shops and inns are showy. In the morning from 7 to 9 A. M., strangers go to the springs, especially now to Montpellier-Spa. In the great rotunda, they call up and down for numbers one to six, and meanwhile traverse the walks, ladies and gentlemen in morning dress, while a band of music is playing. They then go home to breakfast, for no one breakfasts in public. Numerous equipages, horses, and asses are seen; you also find them to let in the streets, where small chaises with one horse, called flys, are in use, and where little low wagons with three wheels, drawn or pushed by men, are hired by the sick. For the men there are journals, libraries, billiards, races, and hunting. The ladies walk with book in hand, or appear on horseback. By five or six o'clock every one is at home. In the evening, there are musical promenades. A military band, of about

seventeen pieces, plays in the Montpelier garden, from seven to nine. Meanwhile the company are walking up and down on the turf, in parties without any intermixture. This walking in large parties by good music, playing pieces from Handel, Mozart, Rossini, and Irish melodies, always concluding with "God save the king," affords a quiet simple pleasure. Once in the week, there is a ball in the rotunda, which commences about eight o'clock, and where ladies appear in walking dress, and dance in hats. In the assembly rooms is a very handsome parlour, where card parties assemble daily; and balls are given on extraordinary occasions, and concerts occasionally. The theatre is open several times a week.

A master of ceremonies is employed, to promote sociability, and expressly to conduct the balls. The present has now kept his post for fifteen years. He gives yearly two subscription balls for his own benefit. Every guest, on his arrival, inscribes his name in the books of the master of ceremonies, on which the latter waits upon him personally.

Leamington lies near Warwick, is two hours' journey from Birmingham, and ten from London. The small town is nearly new, regularly and conveniently built; the establishments for drinking and bathing are like those in Cheltenham, but on a smaller scale; the country is equally hilly, and perhaps more beautiful. In the neighbourhood are the ruins of Kenilworth castle, so celebrated in Walter Scott's romance, and the wonderful castle of Warwick, well known by Prince Puckler's excellent description. Leamington has also saline, chalybeate, and sulphureous waters. The saline springs are found wholesome in dyspepsia, hemorrhoids, chronic gout, rheumatism, scrofula, swelling of the cervical and mesenteric glands, chronic ophthalmia, old ulcers, and cutaneous eruptions; on the other hand they are useless in stone, white swelling, and rickets. The sulphur springs are frequently used in combination with the saline waters, drank also by dyspeptics, those suffering with disease of the spleen and liver, and especially by persons who have lived in hot climates. The baths are also used in long convalescence from measles and small-pox, after the use of mercury, and in hypochondriasis. The chalybeate waters are frequently mixed with the others. They are recommended in chlorosis, cachexies, dysmenorrhœa, and weakness; they act injuriously in scirrhus, pulmonary disease, plethora; and likewise in constitutions inclined to apoplexy, hæmoptysis, all kinds of asthma, cough, and consumption.

Brighton.—The sea, which the English so well know how to prize and to use, plays an important part in their therapeutics. Among the numerous resorts for sea-bathing, the Isle of Wight and Brighton hold a distinguished place. Brighton is only fifty-four miles from London. Whoever wishes to withdraw suddenly from the cachexia Londinensis—that is, from the disgust produced by a large town and its narrowing occupations—flies to Brighton. With its dry air and dry soil, lying near the crowded canal, this town has

a most fortunate position for a sea-bath. The air of the neighbourhood is certainly not so bracing as on the Isle of Wight. The town has about 40,000 inhabitants, and extends itself about an hour's ride along the shore. During the season, the number of residents is almost 80,000. The royal family have for several years chosen this as their winter residence. Here George IV. built a pavilion, a large enclosure with a single pillar, whose cupolas and minaret-like summits make a striking appearance. The town increased in consequence more rapidly, now contains beautiful squares and crescents, and between it and the shore leads a long broad quay. The shore is covered with gravel for about forty paces in breadth; then comes fine clean sand, and a very gradual descent. Fourteen years since, a chain pier was erected directly out into the sea, 1134 feet long; it is at once an iron walk, a balcony, and a landing-place. Parties walk here by the sound of music, and enjoy a view of the whole extent of the town, and of the ever-changing sea with its innumerable ships, which are passing through the canal.

The time for bathing is from early morning till noon, and the bath is taken either in the open sea or in bathing-houses. All the arrangements are conducted by private proprietors, and no particular bath physicians are employed. For bathing in the open sea, two-wheeled cars are drawn by a horse to the proper depth, which is reached very gradually. Each car contains a towel and a glass. The price for the use of them is sixpence. Ladies go into the water in a separate place, and, as they generally do in bathing, wear large woollen bath dresses; they are always accompanied by a female attendant. The bathing-houses, however, are much more used. Of these there are a great number, containing warm and cold baths, both large and small; shampooing baths, in which rubbing and kneading of the skin are performed; shower-baths, and even steam-baths. Subsequent exercise is held to be very serviceable. Numerous parties are seen, about noon, elegantly mounted. In general, even at Brighton, bathing in the sea is but little resorted to; the warm sea-baths are principally employed, and the sea air is accounted very beneficial.

The mode of life is, for the people of quality, a mere continuation of the amusements of Cheltenham or of London. Theatres, concerts, balls, and libraries, are always accessible. Steam-vessels are constantly in readiness for Dieppe, which lies opposite, and for the Isle of Wight. Brighton has no harbour, but the chain pier already mentioned supplies the place of one. Besides sea-bathing, there is found here a mineral spring, a chalybeate water, and recently an establishment for artificial springs has been set up by Dr. Struve, called German Spa, which promises to be successful.

EMPIRICISM.

From the nature of things, quacks find in Paris and London circumstances very favourable to success. The famous philoso-

pher, Dr. Johnson, says that the reason why quacks succeed so well in England is, that nine tenths of the inhabitants are wholly ignorant on medical subjects. The reader will easily call to mind the most famous—as James Graham, who once erected a temple of health, and named himself president of the council of health, (*vid.* *Travels of Archenholz*); the Chevalier Taylor, “the pope’s, emperor’s, and king’s ophthalmic physician, author of sixty-five works in various languages, and of an art of pleasing, with the most interesting remarks on the power of prejudice;” Solomon, the celebrated discoverer of the balm of Gilead; and Brodum, whose cardiacs for a time were in great repute. There are now in London two charlatans, who are so distinguished as well to deserve mention. One is called St. John Long, the other Morrison. Long practises rather in the higher circles, and cures by a liquid which contains “murderous” irritants. Morrison has his zealous adherents among the lower classes, and his reputation is founded upon pills. Of these he recommends from twenty-five to one hundred to be taken at once. He calls them vegetable universal medicines. They consist of aloes, colocynth, and a strong addition of *extr. conij.* Analyses, however, have given different results, and it is suspected that they are frequently changed. It has been proved, by legal investigation, that many individuals have been sacrificed to their operation. Yet he goes on practising, and has lately, after conviction of manslaughter, only paid a fine of two hundred pounds, which in comparison with his profits was trifling. But, by making public these unhappy occurrences, the eyes of the people are opened to the character of such pretenders, as has already happened in the case of St. John Long. Morrison exhibits a pamphlet, containing a sketch of his own biography, and asserts that he studied in Germany, and particularly in Henault. After twenty-five years of bodily and mental suffering, he made his fortunate discovery when the whole faculty had failed in curing him. An engraving is prefixed, in which he appears in a fur cloak, whiskers, and a white hat. He calls himself Mr. Morrison, the Hygeist, president of the Society of Health. Among his fundamental principles are these—“Blood makes blood;” “Pain and disease spring from the same origin, and may therefore be regarded as synonymous expressions;” “Diseases arise from uncleanness in the blood, or, in other words, from sharp humours in the blood;” “The humours which injure the body have three sources—the inherited, the contagious, and the personal.”

NOTES.

The 17th June I saw the opening of a mummy, performed as a sort of dedication of the new school, founded by Brodie in Kinnerton street, near St. George’s. The collection was very numerous, crowded, in fact, as a rout, doors and stairs occupied, and the assembly included many persons of rank and of science. The well-known Egyptian traveller, Wilkinson, was present. The

outer box was already removed ; the inner was made of sycamore, and covered with hieroglyphics, invocations to the Egyptian gods in behalf of the dead. The mummy was taken from Thebes, out of the temple of Ammon, and was a lady of rank. It was brought from Egypt by Sir Frederick Fitzclarence, sent to Mr. Keate, the surgeon, and by him presented for examination. The body was thickly and carefully enveloped in cloths, covered with a bright yellow bituminous mass ; their separation could not be effected without the knife ; a yellow dust or mould was scattered about in great quantity by the process, and smelt strongly of resin. At length appeared a dark brown, bronze-coloured form. For 4000 years debarred of her natural decay, she was now again compelled to an artificial resurrection. Every appearance of flesh had disappeared from the skeleton ; the weight was some pounds. On the breast lay a beetle, a round green stone about an inch in circumference ; papyrus was not found. Mr. Pettigrew, a surgeon, and a writer on this subject, delivered a lecture on mummies. The word mummy comes from the Egyptian word *mum*, which means wax. He spoke of the supposed healing power of mummies in the fifteenth century ; how often, on this account, they were taken and counterfeited ; how the money-making Jews gave to fresh bodies the appearance of mummies, in order to sell them by fragments ; and how, as the fraud was discovered, the faith in them gradually diminished. He said he had boiled a piece of mummy three years previous, and that the odour given out was like that of flesh. Insects have been found in the resin of species no longer known.

Homœopathy in England.—On this, as on other subjects, the complaint may be made of the English that they know so little of their neighbours. In fact, until lately, they have paid little attention to the state of medicine abroad. Hence it is that homœopathy at present is taking them by surprise. They might long since have anticipated its approach, and have foreseen that they would as little remain exempt as other countries. It is to be hoped that their conceptions of German medicine will be so far enlightened, as to prevent their judging of its character by this doctrine.

It is three or four years since the first homœopathic physician appeared in London. Dr. Quin, a person of highly respectable character and education, translated some of Hahnemann's writings, and wrote himself in Latin a homœopathic pharmacopœia. Besides him, there are now three or four homœopathic practitioners, themselves Germans, the number of whom abundantly satisfies the demand of the public. Many Englishmen have made themselves acquainted with the doctrine during a residence in France, Germany and Italy. In Paris, especially, Dr. Trotman may be mentioned as an English homœopath. It has lately been extending its influence in England, and one clergyman and one lady have written in its favour. In London it has found adherents both among the aristocracy and the rich tradesmen of the city. The medical societies, at least the London Medical Society, has begun to pay it

some attention. Dr. Whiting, president of this association, has offered to a homœopath to give him an opportunity of trying the system on a certain number of his patients, which offer was declined by the latter, on the ground that he might perhaps be less successful among English than among German constitutions. Dr. Whiting declares that he has himself tried homœopathic treatment while suffering under indisposition, but without any marked advantage. I am not acquainted with any attack upon it from a scientific source. People are content to amuse themselves with comical anecdotes which we all know in abundance, but which are not particularly to the purpose. What will the English say when homœopathic cases are related to them? They will no doubt know how to judge of them excellently well.

Oxford.—When one sees Oxford with its two and twenty colleges, large, antique, quiet structures; where the gardens, with their evergreen shrubs, bushes, and banks, the broad courts strewed with yellow sand, the cells and walks wear the same Gothic character; when one sees all the circumstances inviting to retirement and study, the lofty rows of trees, the dark alleys on the water side, the libraries so well fitted for abstraction and forgetfulness, the painted windows of the chambers where the student may waste the midnight oil and watch the return of day, the costume of the middle ages, fitted to bring to the memory Bacon and Erasmus; one cannot but wish that other objects of science might here fill and employ the heads, which are content now in busy idleness, to pore over the classics of Greece and Rome.

Sea-sickness is caused by the rolling motion of a vessel, and produces the same sort of nausea which is caused by a swing. The whole body is disturbed, as well as the brain and the ganglia. The same sort of disturbance follows when one moves the head rapidly up and down. The proximate cause of sea-sickness is concussion of the brain. There are instances in which, in persons predisposed to the affection, apoplexy of the brain has been the consequence. Sea-sickness is much more frequent in steam vessels, because their lightness offers less resistance to the waves, because the engines produce constant agitation, and because the smoke and air of the burning coals are both calculated to produce nausea. On rivers the motion is too slight to produce any effect. Old sailors often feel sea-sickness again in steam vessels, though the motion of others has long ceased to produce any effect. It can hardly with propriety be termed a disease, for this proceeds, when once commenced, independently of its cause; but sea-sickness is a mere interruption of the usual healthy processes from an accidental circumstance, and these return as usual when this circumstance is removed.

Unprofessional persons have asserted, that after sickness of several days the colour of the skin changes and remains yellow for a considerable time. This assertion is by no means improbable in

itself, for we can easily conceive that after violent vomiting a re-absorption of the bile may produce temporary jaundice.

The proper remedies are those which relieve vertigo—free air, determined will, champagne wine, hain, rum, cardiacs, applications to the stomach, &c. In long voyages and rough weather, however, these are of no avail, and any attempt at resistance is vain and unwise. To repress the vomiting is in fact not to subdue the disease, but only to counteract the operation which is fitted to moderate its violence. It is most advisable to lie in bed, and by placing the head on the pillow, to secure to it a solid position. From time to time the nausea will become more urgent, disquiet and heat extend over the whole body, sweat break out, and vomiting follow. As a means of mitigating the last it is advisable to take a single swallow of water and a small bit of bread a short time before. After the vomiting follow quiet, fatigue, and sleep. After some hours, the same succession of symptoms is renewed, and continues perhaps a quarter of an hour. In this manner a man may pass several days, more or less, according to the length of the voyage and the kind of weather. If the wind lulls, or the vessel nears the shore, the sickness diminishes, and in the latter case even before the land can be seen. The pale faces collect upon deck, the appetite returns, and many experience no ill consequence from the severe vomiting, though some may have to suffer still some days.

CHAPTER V.

FRENCH SURGERY AND OPHTHALMOLOGY.

Wounds—Surgical anatomy—Chirurgico-pathological anatomy—Bandages—Operative practice and medical surgery—Discoveries—Strictures and stone—Lithotritry—Velpeau—Amussat—Ophthalmology and specific inflammation.

In the second chapter, it has been remarked in what relation the doctrine of inflammation seems to stand to French surgery, and how far the general character of the latter seems to spring from the former. Some peculiarities remain to be noticed.

The treatment of wounds demands a less favourable judgment in regard to the mode of effecting union. Cold water is very little employed in the way of fomentation. Boyer does not notice it in his surgery. Some recommendations of this practice have lately appeared, as by Bérard (*Arch. Gen. de Med.* 1835), and it is applied by Sanson, Breschet, and Velpeau. If sticking plasters are used, they are not so neatly spread as is done in England by machinery. But bandages and charpie can hardly be placed on more carefully than the French do it.

The especially surgical relations of anatomy have been less perfectly developed here than elsewhere. Surgical anatomy has few

monographs to exhibit, and in their surgical treatises are found fewer remarks of a practical character upon all the parts which have to be regarded in important operations. From this censure must be excepted the bones in their relations to fracture, the muscles in connection with luxation, and the anatomy of the urinary and genital apparatus, as far as the bladder, urethra, and uterus are concerned, the diseases of which form, at this moment, a favourite subject with French surgeons. Their surgical anatomy is evidently derived from recent subjects, or, as regards osteology, from dry preparations. The great facility of pursuing anatomy by dissection, important as it is, does not unite in itself all the advantages which the preservation, and likewise the fine and accurate exhibition of anatomical structures and conditions, possess. The immediate influence of this in their surgery is manifest in their chirurgico-pathological anatomy; hernias, fractures, luxations, aneurisms, accidental textures, are wanting in France to pathological observation. The student has seldom an opportunity to learn these things in recent preparations, and he will seldom retain their anatomy in his mind, unless he can renew his impressions by frequently examining cases skilfully prepared and accurately represented. Not only is France until now in want of such a collection, but there are few original works in her surgical literature in which pathological anatomy is as well illustrated as in England and Germany.

For a long time the French have enjoyed a reputation in bandaging, which has been increased by Dessault. However the importance of this treatment may hereafter be questioned in regard to wounds, it will probably remain in favour for fractures and luxations. Simple fractures are not splinted and bandaged early, but they wait for the inflammation and swelling to subside, favouring this result by fomentations and rest. The bandage is applied not only with tasteful neatness, but with the greatest care. The old French school, and Roux, employ extension also, but the method of Dupuytren does not include this to the same extent. Patients are seldom dismissed from the French hospitals with simple fractures badly healed. The same may be said of luxations, in which they are generally acknowledged pre-eminent. Such excessive simplicity, however, as Mayor of Lausanne is lately disposed to give to bandages, (*Vid Nouveau Système de Déligation*, Genève, 1832,) by recommending three-cornered towels as sufficient for all cases, and by placing planchettes under the limb instead of splints, is calculated to do more harm than good.

The operative skill of the French surgeons cannot but be acknowledged. It is remarked equally upon the living and upon the dead body. Dupuytren was admired for it. Roux, the follower of Boyer, and the representative of the old French surgeons, operates with adroitness, rapidity, certainty, elegance, and in a truly masterly style. In fistula lacrymalis he is peculiarly expert. He reminded me by his dexterity of my respected teacher, Langenbeck at Göttingen. Larrey is the patriarch of French military

surgery; Lisfranc is remarkable for his new method, and for his ready and bold execution. It is to be regretted, that he has ceased to give operative instruction. Sanson and Velpeau are both young operators, and are to be mentioned among the surgeons whose operations are practised publicly, and can be most easily seen. Amussat is not attached to any hospital. In the operative courses, the student is furnished with abundance of subjects, receives a very full oral and manual lesson on operative surgery, and performs every operation at least twice, and commonly according to several methods. The French prefer to use the bistoury, where we are accustomed to the scalpel; their bistoury is usually of common steel and of pointed form, in order that the edge may be drawn forward in a convex direction. They always push in the director, when they wish to slit up a part, and hold this in the left hand as a guide for the knife, in preference to the forceps. On other occasions, as in removing a bandage, they make use of the dressing forceps. Many instruments are made long, which it might be supposed more convenient to have shorter. Habit no doubt has much share in producing this impression. It is also very easy to exhibit, in the practical course, which of two methods is suited to one and which to the other. There were few, for example, who were not pleased with Lisfranc's flap amputation from within outward, principally because it gives a neat and even cut surface. A very good opportunity is here offered for practice in passing the catheter, both straight and curved, elastic and metallic; advice and direction are given, and the necessary skill is easily acquired. Of the auto-plastic operation, it is already said, that it will command much attention, and will find a large field for its application. It has recently drawn forth a work from Ph. F. Blandin, "*Auto-plastie ou Restauration des Parties du Corps qui ont été détruites, à la faveur d'un emprunt fait à d'autres parties plus ou moins éloignées*," 1836. The visit of Dieffenbach to Paris, in 1834, had no doubt an influence in this respect.

The medical treatment of surgical cases is in part simple, so as to have incurred the charge of carrying simplicity to excess, and in part an application of the Broussaian doctrine. This application is due mainly to Lisfranc, who has brought local bleeding by leeches into most extensive use in surgical cases. An operation is always preceded by pediluvia, &c. In consequence of the want of attention to the specific character of inflammation, ulcers are treated without due regard to constitutional circumstances. The German doctrine of ulcers is still unknown. Sometimes relaxing poultices are applied, sometimes chloride of lime, sometimes adhesive plasters, sometimes wax. Cullerier (the nephew) treats syphilis in the Hôp. des Vénériens with quicksilver, generally with the sublimate, in the form of Van Swieten's liquor. Ricord, in the same hospital, uses mercury only for secondary symptoms. In this respect, all France may be considered as divided into two great parties, that in favour of mercury and that opposed to it.

There are, undoubtedly, in Paris, a considerable number of

distinguished physicians and surgeons, among whom an honourable zeal, and an active emulation, are constantly kept alive; but these qualities are, it must be confessed, much more called forth by surgery than by medicine. A new method of performing an operation, or the invention of an instrument, forms the usual basis of a medical reputation. Of these, in fact, there are so many, that the greater part fall again into oblivion, and thus arise fierce contests for the honour of priority. They are communicated to the Academy of Medicine, which usually chooses a commission to examine and report; a lively discussion ensues, and however well they may have sustained the scrutiny, they may be obscured by prejudice, or displaced by some new novelty. Dupuytren used to say, that it was one thing to invent, but a much more difficult thing to bring your invention into use.¹

The subject which now especially attracts the attention of surgeons, is the diseases of the urinary and generative apparatus. Among the latter, Lisfranc has particularly studied the engorgement and cancer of the os uteri, and the speculum vaginæ has led to many new results. Among urinary affections, stricture and stone have been the most attended to. It has even been made a subject of complaint, that when one hears any thing of French surgery at the present day, the principal subject is still these diseases.

Strictures, which twenty years ago were cauterised in England, especially by Everard Home, are now mostly managed in France in the same manner, under the authority of Ducamp and Lallemand. Very various instruments have been imagined for the purpose, an evidence that the practice is not yet wholly satisfactory. The great difficulty is in touching the precise place of the disease. The application of the elastic, and sometimes of the conical catheter of Dessault, has still numerous partisans; but perhaps one might wish the method of bougies to be of more general application. The *sonde exploratrice* is a pencil soaked in wax, which, being made soft, will receive and retain the form of the stricture, and is graduated to determine its depth. The enlargement by incision seems now to be very little used. Mayor has advised to make way into the bladder by *cathéterisme forcé*. He takes conical, more or less pointed, tin catheters, of various thickness, and by gradual application of force overcomes the stricture. Trial of this mode has been made in the Hôtel-Dieu, and in seven successive cases the result was unfortunate. (Vid. Gazette Méd., No. 45.) Besides pain, which for the most part occasioned the interruption of the cure, bleedings, inflammations, abscesses, and other misfortunes, supervened. Happily we have so seldom strictures of the urethra in Germany, that one may pass through several surgical wards in the hospitals without finding a single case.

Stones in the bladder, however, are perhaps the principal object of attention with the French surgeon, especially since the fortunate discovery of lithotrity.

¹ C'est quelque chose d'inventer, mais c'est bien plus d'en repandre l'usage.

Lithotrity has still a severe contest to withstand, although the most violent opposition has ceased; and would, it is said, have done so earlier, had not Civiale shown more talent for breaking the stone than for defending his own reputation. The first idea of Civiale avowedly was, to destroy the stone by a solvent fluid, and he invented for the purpose a kind of bottle, which was to take up the stone and the liquid. The plan failed, in consequence of the impossibility of finding a material which would resist the fluid while this dissolved the stone. Thénard decided that these qualities could not be combined. Civiale gave up his previous plan and commenced a new one. In order to break the stone mechanically, it was necessary to ascertain that a straight and moderately large catheter would enter the bladder; this he proved on dead bodies and on himself. In making his first two instruments, he still had in view the solution of the stone; his immediate purpose was to break off small pieces, in order to determine their chemical composition. At last he invented the instrument which he now makes use of. It is a straight metallic tube, containing another tube, ending in three elastic arms, which, when drawn back, close by entering the external tube; within is the steel lithotritor, a bar with pointed knobs at the end. This bar is made to revolve by a bow acting on its external end, and thus the points at the opposite extremity grind down the stone. On its application, the urethra shows itself very extensible—a fact which has already been ascertained by its gradual dilatation. At the commencement of a lithotritic operation, warm water is injected, in order to dilate the bladder. Pain is often entirely absent, but this depends much on the sensibility of the passage; it seldom continues, however, longer than the session—that is, for some minutes. Sometimes the patient can immediately return to his occupation, but he does not always come off so easily. Should patients apply at an early period, in place of waiting, as they have been accustomed to do, for fear of the cutting operation, they will have less to suffer. Encysted or enormous stones, or excessive sensibility of the mucous membrane of the bladder, are contra-indications, which, however, are not frequent, and will be still rarer, as they depend on the procrastination of the operation. The whole duration of the treatment is usually short; sometimes it requires three months; six to twelve sessions are requisite. Immediate danger, as of injuring or wounding the bladder, is not much to be apprehended; but unskilfulness, in this as in other cases, may do mischief. Amussat has shown, that the true anatomical form of the urethra is not opposed to the introduction of a straight instrument. It is remarkable, that straight catheters have been found even in *Herculaneum*. Later discoveries, however, are directing themselves to the application of curved catheter-formed instruments. Such an one was found in Denmark by Jacobson. A steel catheter consists of two pieces lying on each other, which are separable. The two beaks are bound together by jointed pieces, and when the stone is caught between them, a uniformly increased pressure is made

upon it by means of a screw. Baron Heurteloup adopted this ingenious idea, but left out the jointed intervening pieces, and has formed an instrument, which may be moved to and fro like a shoemaker's measure. On the beaks, the opposite surfaces are set with strong teeth, and while, by striking with a hammer against the upper leaf, this is driven forward, the stone caught between them is broken. An opening in the under plate favours the falling of the fragments. The instrument is called "*Percuteur courbe à marteau*," and for large stones the percussion it produces is preferable. The disadvantages it presents are, that it may break or bend in the bladder; but the first is less to be feared with a hard mass of stone, than in wood, for example; while the latter is prevented by good steel, and by previous trial of its temper. A sudden snapping of the stone is rendered less injurious by the water with which the bladder is filled. In applying it, a solid support is used for fixing the instrument, which is effected by screwing a frame upon the bed; this takes up the middle piece of the instrument, and makes the position of the patient wholly dependent on itself. On this single ground, Dupuytren has not expressed himself wholly favourable to the instrument. Heurteloup, who now lives in London, had, up to 1833, applied the instrument two hundred to two hundred and fifty times. The latest improvements in lithotritry are made avowedly in this instrument, by Leroy d'Etiolle, Segalas, Amussat, Tanchon, Labat, Lestrangle, &c. Its improvement has, in fact, been an object of eager competition. In place of Heurteloup's immovable frame has been substituted a kind of vice, which is held during the operation by one or two assistants. It is of wood, or has in the middle a ball of lead, which embraces the *Percuteur à marteau*, and diminishes the jarring of the hammer. Besides percussion, there is also pression, in which, by means of a screw, the two beaks press the stone gradually together; this is called *brise-pierre à pression*. Finally, the two powers of pression and percussion have been united, and the instrument of Segalas will act on the stone either with the hammer or with the screw. A graduated measure is found convenient to determine the size of the stone by that of the opening of the beaked ends. Meanwhile, Civiale, except in rare cases, holds to his old method in spite of these improvements, and by no means rejects lithotomy, but directs it whenever indicated.

The enemies of lithotritry are Larrey, Sanson, and Velpeau, who are not disposed to have lithotomy sink into neglect. On the 5th of May, 1835, and in the following sessions, a lively discussion arose in the academy of medicine on this subject. Its advocates are now content that lithotritry should be the rule and lithotomy the exception, but the opposers wish to reverse the axiom. The two parties eagerly adduce statistic results and compare numerical returns, though it is conceded that the cases of lithotomy have never been so accurately recorded and collected as is necessary for the purpose of comparison, and it is difficult to say to what extent the lithotritists in giving their returns are unbiased and impartial. At

all events these seem to be constantly becoming more and more favourable. Roux said, on the occasion already alluded to, that he had performed lithotomy five to seven hundred times since 1805, but could find only one to two hundred observations of the cases. Dubois and Boyer would say the same thing. Their general result is that the fatal cases are one to five or six in adults, and one to twenty in children. According to a report which Larrey made upon lithotritry in 1830, it followed that of twenty-four stone patients in the Hospital Neckar, operated on by Civiale, thirteen were cured, and eleven died. Lately, out of fifty-three patients who were there treated, forty-five were operated on, thirty recovered, fifteen died; the others kept the stone. According to another statement (in the *Dict. de Med. et de Chir. Prat.*) there have been two hundred and forty-four patients operated on by Civiale, two hundred and thirty-six cured, five lost, three left uncured. Heurteloup has cured thirty-six of thirty-seven. Lisfranc and Dubois are both for lithotritry, and have indeed both performed the operation on themselves. Lisfranc said before the academy that he had had a stone for eighteen months, which was not recognised, as no other affection of the bladder was present; he read and consulted, and at length convinced himself that lithotritry, at least in the majority of cases, was preferable. He therefore subjected himself to ten sessions, and is now quite well. On this the society expressed their congratulations. Dubois finds himself equally well after the same operation. Sanson acknowledges that if he had a small stone and a sound bladder, though he would not have it done by others, he would operate on himself.

Velpeau, the most determined and perhaps the most powerful opponent, because he adduces his own experiments, and was formerly an adherent, acknowledges that if he had a small stone and a sound bladder he would be lithotritised. Civiale brought forward in the Academy of Sciences, on the 5th October, 1835, statistic returns on lithotomy from the great hospitals of Europe, which gave 5713 operations, 1141 deaths, and 4478 cures; while his own practice furnishes but six deaths to two hundred and fifty-seven lithotrities.

We have however to remark on this contest, that the numerical array of hostile facts furnish no certain result, and are much like reports of battles where each party exaggerates its own bulletin. Meanwhile we may content ourselves that lithotritry is daily more acknowledged as a bloodless method, as less painful, quicker, and yet surer than its rival. It must indeed be confessed, that we Germans, as far as experience goes, are not quite competent judges, since we are so fortunate as to have very few cases among us.

Velpeau has in a few years gained a great reputation. He has written on midwifery, on operative surgery, and on surgical anatomy, not only treatises but classical compendiums, has produced an anatomical and physiological essay on embryology, and several monographs. In the concours he is now for some time accustomed to come off victorious. By his comprehensive knowledge, which

extends to foreign literature, by his industry and accuracy, he makes a dreaded but wholesome opposition to new discoveries, which he subjects to his own experiments, and shows up with logical fluency. Now removed from Pitié to Charité, to take the place of Roux, who has succeeded Dupuytren at Hôtel-Dieu, he has been still increasing in zeal and industry, though in manual expertness he may not yet be counted as one of the first operators. I saw, among others, several new instruments invented by the instrument maker Charrière, applied by him.

Amussat holds every week at his house what he calls conferences. Both French and foreign surgeons are present, furnish and listen to communications, and then hold a free discussion upon the subject treated. Amussat is now busy with the torsion, with strictures of the urethra, lithotrity, reduction of hernias, and his experimental surgery. The torsion of arteries, which thus far has made little progress in France, of which I saw nothing in England, but which finds more favour in Germany, appears, if one sees and practises it with Amussat, in no unfavourable light. He makes use for the purpose, of two forceps. In the left hand is held the forceps which was originally intended for the *refoulement*, with round tips; in the right is held the pointed one, made to close with a slide. With the last the operator seizes the artery wherever it can be seen, draws it out, and holds fast by the end; with the one in his left hand he seizes it crosswise, presses it somewhat together, while by still drawing he lets it slip between the legs, until about half an inch is obtained, by which the inner coat can be ruptured. The left forceps is now more closely approximated, and the operator commences turning with the right, previously closed, so that the artery is twisted to the extent of the interspace between the two. The twisting is continued till the end of the vessel is broken through. The artery is then allowed gradually to retreat. Amussat is still making improvements in the instruments for stricture and lithotrity, especially in applying percussion and pressure. He makes the operation for strangulated hernia unnecessary in many instances by patiently continuing his efforts at reduction for twenty-four hours. Experiments on animals, especially on dogs, form with him a regular branch of surgery, which he terms *chirurgie experimentale*. He holds the opinion that young surgeons, by operations on animals, gain not only skill but coolness in their calling, and expresses the hope that in a few years these exercises will be recognised as an essential department of instruction in all schools.

OPHTHALMOLOGY.

St. Yves, Janin, Maitre Jean, Gendron, Wenzel, Guérin, and Demours, left the ophthalmic art of the French much in the condition in which it remains at the present time. During the interval this branch of surgery has been nearly lost sight of. No one has been found to take it up as an object of especial attention, and the progress of medicine and surgery has gone on without carrying

this with it. Since the *Bibliothèque Ophthalmologique* of Guillié, which failed after a short time, (in 1822,) no journal has been devoted to this science. Now that the neglect into which it has fallen has begun to be remarked, attention has been again turned to it, at first with some prejudice, on account of its foreign aspect, which will soon, no doubt, be succeeded by a zeal inspired alike by its intrinsic importance, the recollection of the fame of former French oculists, and the eager emulation which exists in Paris. If ocular surgery is no separate branch of our medical science, it was, on the other hand, too much separated in France by the oculists, while by their surgeons, as Boyer, Roux, Dupuytren, it was too little distinguished from general surgery. In this alone lies the otherwise unassignable cause of its neglect. To a certain extent there was a purpose in this; for it was rejected in common with all other medical speculations. At present Italian, German, and English works are translated; Italian ophthalmology has been introduced into Paris by the translation of Scarpa, and by his pupil, Carron du Billards; the German, by Weller's Manual, translated, by Himly's translated introduction to ophthalmic surgery, and by Sichel, a pupil of Walther, Jäger, and Schönlein; the English improvements have become known by a translation of Lawrence. A manual of ophthalmology by Stöber, a Strassburger, but written in French, has appeared so lately as 1834. Among their own surgeons, Sanson, Velpeau, J. Cloquet, and some others, as Rognetta and Robert, are turning their attention to it. Ocular clinics, which before were wholly wanting, have been undertaken by Carron du Billards and Sichel as private instructors, and by Sanson in Hôtel-Dieu. What an amount of ophthalmic disease exists in Paris, and what great results may be anticipated from bringing them together, I was convinced every time I visited Sichel's clinique. But if a still larger clinique, if a separate ophthalmic hospital were erected, and this were filled with the cases which are scattered about unnoticed and unappreciated in this great city; should it be made to contain separate divisions for distinct forms of ophthalmia, and thus to admit of observations, investigations, comparisons, and distinctions, such a picture of the future is not a little calculated to charm the fancy.

After some farther notice of French ophthalmology, I shall proceed to consider a peculiarity of German ophthalmic science, and likewise the doctrine of inflammation in that country.

Roux differs from Dupuytren in his practice in cases of cataract, on which the latter operated by depression principally, while the former in La Charité gave extraction the preference. Dupuytren, unhappily, I had no opportunity of seeing. Roux admits cataract only in spring and autumn. From the moment of their reception the patients are put upon a course of preparatory treatment, as is the especial practice in France before great operations, frequent pediluvia are ordered, and on the morning of the operation a blister is placed on the neck, which is afterwards kept discharging. Enlargement of the pupils is rarely a part of the preparation. The

patient seats himself on a stool; the other eye is covered with a compress; the head leans against the breast of an assistant who lifts the upper lid with his finger, while he makes pressure upon the inner angle of the socket against the eye. The operator draws down the under lid, and likewise presses his finger against the inner angle, to prevent any motion of the eye in that direction. A knife resembling Richter's is employed, and the cut is made in a downward direction. After cutting the cornea, the eye is closed; the curved needle serves to open the anterior wall of the capsule; it is then withdrawn, and by means of a small spoon pressure is made downwards on the under lid against the ball, whereby the lens is half rotated, the upper side turns forward and slowly makes its way out. If there are two cataracts to operate on, the second operation is done immediately. Directly after the operation the eyes are bound with a broad compress and a heap of charpie, over which a black silk bandage is fastened with pins.

Among the new instruments, the nasal catheter of Gensoul, at Lyons, is worth recommending. It causes some surprise to observe how easily the catheterism of the nasal canal is effected by this instrument. It is of hook-like form; the terminal part, bent to a right angle, is about an inch long, corresponding to the distance of the inferior opening of the nasal duct from that of the nostril, and likewise to the form of the canal, with a slight spiral curve. It is carried into one nostril, while the handle lies perpendicular on the upper lip, close upon the bottom and external wall of the meatus narium inferior; the operator now finds himself with the point of the catheter before the opening of the canal; a slight turn outward, and a gradual raising of the handle allows the point to slip in, and with little assistance the instrument rises of itself, and by observing the lacrymal sac on the dead body the point is seen to project, and the skin to be raised. The handle now comes to be directed perpendicularly upon the upper lip. If the point is once conceded, that in consequence of changes in the nasal canal a mechanical dilatation may become necessary, this method of reaching the canal from below is at all events the best where the object is to avoid the operation, and the uncertain method of finding the passage from above, which is the secret dread of many an oculist. Even injections, which as local means in diseases of the mucous membrane of the nasal duct frequently appear very desirable, can, by means of a canula formed in this manner, be applied with little difficulty, and it is easy to see how even a catgut thread can be applied in this way. The advantage is evident, and the application of this nasal catheter exceedingly easy. I have not only been with the instrument from subject to subject, and every where introduced it without failure, but have several times done it upon the living body without producing any considerable sensation of tickling.

Velpeau has lately tried and recommended the application of a blister laid over the whole eye. It does not avail in all inflammations of the cornea, but is of great use in acute affections of the

conjunctiva and sclerotica. The mode of applying it is this. It is well to rub the skin over the lids beforehand with linen dipped in vinegar. The plaster must be large enough to cover the whole surface of the orbit; the lashes and brows need not be shaved. It is laid on the closed eye, and lint and a bandage are placed above, to cover and fill the hollows. The next day it is taken off, and the wound washed with warm water. It heals in two to three days, and by this period the symptoms of inflammation have generally disappeared.

Carron du Billards, an alumnus of Paris, is more favourable to depression and reclination than to extraction, and he has regard to the especial indication for each. In his treatise on the operation of cataract he gives a learned view of all the methods, together with their appropriate terminology, to which one must become accustomed, but which the French call tedious and "græcobarbarous." He is attached to cauterisation with potash, especially in scrofulous and catarrhal conjunctivitis and corneitis.

Sichel, the German oculist, has published "General Propositions on Ophthalmology," &c., 1833, as an introduction to a special work on rheumatic inflammation of the eye. He gives in this a short view of the fundamental principles of German ophthalmology, somewhat coloured by the Schönlein theory of morbid life, which has gained him no small notoriety.

Velpeau, whose mind, as observed above, is turned in every direction, has carefully watched this new movement in ophthalmology. When, in March 1835, he entered La Charité in place of Roux, and there commenced the surgical clinic, he expressed, in the first clinical lecture, his individual views somewhat at large on various subjects. It was on one of these occasions that he took up the subject of ophthalmology. I have never had one so favourable to notice the peculiar character of French medicine and surgery. He said it was becoming a favourite object with some, to introduce the ophthalmic treatment of England and Germany into France. He admitted that in the eye, as in the rest of the body, distinct anatomical symptoms ought to be separately considered in regard to inflammation, especially as its vessels are furnished from different trunks, the conjunctiva, for instance, receiving branches principally from the temporal and frontal arteries, the sclerotica from the ophthalmic. On this ground he distinguishes a conjunctivitis from a sclerotitis, an iritis from an inflammation of the capsule. He went no farther however in discriminating the membranes and textures of the eye, and seemed to embrace all affections of deep-seated parts under the name of "Ophthalmie interne." Again, he admitted the influence of constitutional disease in ophthalmia in general; but held that the form of the ophthalmic affection was determined only by the anatomical nature of the part attacked; and that the character of the internal disease exerted no influence upon it.

SPECIFIC INFLAMMATION.

A peculiarity of medical surgery, or of the doctrine of inflammation in Germany, is the extensive reception and progress of specific inflammation; and what is now to be said on that subject will connect itself with that which was remarked in the second chapter on the doctrines of inflammation in France and England. The term specific inflammation is applied to the peculiar condition of an inflamed part, as dependent on constitution, and on location. The view taken of this condition must be twofold. In the first place, we see an inflammatory process combined with a special constitutional disease; secondly, we admit a relation of the particular anatomical system affected, as well as of the anatomical form of the parts inflamed, to the nature of the general disease. In this local character may be traced pathognomonic symptoms of the specific internal disease. Specific inflammation, therefore, is that which, standing in combination with constitutional or qualitative disease, is thereby determined in its seat and form, and thereby makes itself known.

As respects the first branch, the constitutional cause, it is not overlooked in England, or in France, but still not recognised to the same extent as in Germany. The English distinguish specific from common inflammation; they call the former healthy, the latter unhealthy. They divide it into two kinds, that occurring through a particular state of constitution, and that occasioned by the inoculation of a poison. Among the specific diseases are reckoned gout, scirrhus, scrofula, gonorrhœa, syphilis, &c. The French, so far as they follow the Broussaian doctrine, can admit no specific character of inflammation; they are directly opposed to this doctrine as to an *entity*. Broussaian inflammation differs only in degree, and knows no qualitative distinction. As respects surgery, in which the specific local cause comes to light most evidently in its local consequences, we well know the little attention which, either in France or England, has been paid to it, especially in the view taken of ulcers. In these cases, it is admitted that the continuance of the same local symptoms must be ascribed to the same general causes, and these have been divided into idiopathic and sympathetic. We do not here refer to the admission of the dependence of local on constitutional affections, of which there is no want in England, as the memory of Abernethy testifies, nor in France, but to distinctly marked characters of the forms of disease, appearing locally, but belonging to a specific disease. These forms are not so well distinguished elsewhere, as in Germany.

The second branch of the doctrine of specific inflammation, to wit, the seat and form of the disease as determined by its specific character, and the diagnostics thence drawn, appear to be much more within the exclusive domain of German science. The English and the French have recognised it in syphilitic ulcers, the characteristic form of which they have distinguished; witness the

labours of J. Hunter, Carmichael, Cullerier, and lately Ricord ; and likewise in diseases of the skin, where they have so perfectly distinguished by their form the inflammations of the different tissues. Cutaneous diseases have been distributed into natural classes, according to their specific characters, by Willan and Bate-man, by Jenner, in treating of cow-pox, by Biett and Rayer, and by Alibert, in his "dermatoses." In regard to ulcers, local character is less regarded in these countries, at least as a basis for diagnosis. We find them rather classified as simple, inflammatory, fungous, callous, putrid, ulcerated, carious, and specific ; and Everard Home classifies the latter, in the English spirit, according to the remedies which cure them, as quicksilver, hemlock, salt water, potass, arsenic. If farther, the relation of the locality to the disease is remarked, as the location of syphilis in the throat, of scurvy in the gums, cancer on the under lip, lupus on the nose ; and the fact that gout, rheumatism, scrofula, syphilis, &c., occasion local injury is not wholly overlooked, still this specific character is very imperfectly apprehended in ophthalmology. The case is different in Germany, where the improved state of ophthalmic science has advanced the knowledge of inflammation, and especially of its specific character.

German ophthalmic science does not require any further illustration for Germans ; but as I cannot but hope that this work may find some English or French readers, I shall speak in reference to the progress it has made, and to its connection with specific inflammation. Richter and Beer not only improved the science of ophthalmic disease ; their improvements went much farther ; they not only taught the pathology of the eye, but diffused a better knowledge of pathology generally. As the eye, which was called by Beer a microcosm in the macrocosm, is composed of a great collection of organic tissues, which in the rest of the body are more scattered, as the serous, mucous, fibrous, lymphatic, vascular, and nervous system, as also of structures peculiar to it, as the cornea, iris, choroid, retina ; farther as it is also an external organ, and by its transparency exposed to view ; and, lastly, as it maintains extensive sympathies with the whole body, it is fitted above all to afford illustration of the local and general, anatomical and physiological, normal and pathological, medical and surgical conditions. What was exposed so plainly to the senses, imbibed not too much of German speculation, but just enough of German solidity and sagacity. In fact, the Germans, on the subject of the eye, have pursued that path which the French have followed in regard to the whole body with the exception of this organ. To the eye the Germans applied Bichat's distinctions in general anatomy : here they applied the name of catarrhal or rheumatic inflammation, to what in the lungs or joints had been merely termed catarrh or rheumatism ; and recognised cataract and other organic lesions as consequences of inflammatory action. They farther observed, as did the English, the local relations of the inflammatory process ; saw the injection of the serous vessels, observed the pro-

cess of traumatic inflammation after wounds with the knife, and chose for their treatment the true antiphlogistic method taught by English surgery. But, besides the anatomical relations in the pathology of inflammation, they discovered much of the operations of the whole system, and of the nature of specific disease. A score of years since, there were to be found in the ophthalmic writings of Richter, Beer, Schmidt, and Himly, excellent discriminations of the different diseases of the eye. The last named, my respected instructor, has, besides traumatic, the following ophthalmias: catarrhal, rheumatic, arthritic, variolous, rubeolous, scarlatinous, scrofulous, syphilitic, impetiginous, menstrual, hæmorrhoidal, scorbutic, intermittent, infantile, Egyptian. The descriptions given of these, show very clearly their character, and their relation to the different tissues, but less perfectly their essential variety in form. Surgery has borrowed the doctrine of specific inflammation from ophthalmic disease, and applied it especially to ulcers. Thus arose the helcology of Rust. Here we went a step farther, and added the discrimination of the form and structure of local inflammatory affection, according to its specific character; and so perfect were the distinctions found, that we were enabled to find in the form itself the means and material of a specific diagnosis. The doctrine necessarily followed, that all organic affections, by their seat and external form, afford characteristic phenomena, by which may be recognised the character of the specific disease in combination with them. This is acknowledged as an axiom in Germany. But, as other conditions exert an influence on organic structural lesions and their external form, not only in ulcers, ophthalmias, and cutaneous diseases, but in accidental tissues; as there are to be considered the normal character of the tissue, which is the seat of disease, the stage of the disease, the strength or weakness of the constitution, the means employed, the age of the patient, season, &c., and as these particulars are not always obvious to the senses—the diagnosis thus formed can never be so clear as to enable us to infer the presence of other symptoms.¹

The improvements thus made in surgery, and in the doctrine of ulcers, have reflected back upon ophthalmic science still greater specific discrimination, and at present we have for every form of inflammation of the eyes, not only an accurate description of the local phenomena, of the seat, appearance, colour, figure, the course of the vessels, &c., so as to be able to distinguish the disease by its specific character, but duplicate combinations are adopted, as catarrhal-rheumatic, catarrhal-scrofulous, &c., and conclusions are formed from the existence and form of certain small vessels in regard to the internal condition, as in Jüngken's abdominal vessels in the conjunctiva.

¹ Of these circumstances, I have spoken more fully in my dissertation, which appeared in 1833, under the following title: *Ad parasitorum malignorum, imprimis ad fungi medullaris oculi historiam, symbolæ aliquot.*

If now we observe the doctrine of inflammation in Germany, we shall find that, in the attempt to embrace all, the peculiar merits of the French and the English are neither unknown nor unavailed of. Neither in medicine, surgery, nor ophthalmic science could we have reached our present views, which we venture to consider as making an approach to truth, had we proceeded in the path of examination alone. In regard, therefore, to the important doctrine of inflammation and its practical relations, the true history of the subject would seem to be, that the English, following the paths of surgery, and by the observation of traumatic affection, have improved the surgical branch of the science; the French, taking the route of medicine, by observing fever, by general and pathological anatomy, have advanced the medical branch; while the Germans, guided by ophthalmic science, have effected a union of the two, and founded the doctrine of specific character. In regard to the eye itself, the system of the Germans seems to have been to extend the doctrine of inflammation, which they have here learned, to the whole of medicine; of the French to concentrate their views of general relations upon the eye, and to maintain, that there is in fact no special affection, but that the general organic life renews itself in a particular organ; and as to the English, it must be conceded that, in their late writings on the eye, they have not failed to recognise the ophthalmic science of the Germans, and, as appears by the latest edition of Lawrence's Manual, by M'Kenzie's Treatise of 1830, Walker's of 1834, and Middlemore's of 1835, to admit the specific character of inflammation, at least in its application to ophthalmia.

CHAPTER VI.

ENGLISH SURGERY AND OPHTHALMOLOGY.

Views on English surgery—Anatomy; pathological anatomy and museums—Stone—Modes of operating—Surgery in Edinburgh and London—Internal treatment—English military practice—Ophthalmology.

Not long since, a French writer, Baumès of Lyons, after a view of English hospitals, pronounced a judgment on English surgery, which is published in the *Gazette Médicale*, of May 16, 1835, under the title of "*Aperçu Médical des hôpitaux de Londres, où sont traitées les maladies vénériennes et les maladies de la peau, accompagné d'une revue analytique des principaux travaux des Anglais sur ces maladies*," &c. We have ventured above to assert, that it is difficult to find fault with English surgery, and that the principal improvement needed there is, to take more cognisance of the learning of other countries, and especially of the doctrine of specific inflammation as established on the continent. Dr. Baumès

finds much more to condemn. He calls to mind the parallel drawn twenty years since by Roux between French and English surgery, and maintains that in the meanwhile the mode of operating has hardly undergone a change; that foreign discoveries and improvements have not been adopted, and that treatment has not advanced a single step. He farther reviews their surgical literature, and maintains that, since 1816, nothing important or new has appeared in this department. He also finds that, with the exception of Sir Astley Cooper's and Lawrence's works on hernia, which appeared earlier, the writings of English surgeons contain nothing new—no original ideas—no fundamental principles from which important deductions may be drawn; and that there are no young surgeons who promise to rival the fame of their predecessors. In his sweeping condemnation he includes Sir A. Cooper's late writings on luxation and fractures, diseases of the breast and testicle; B. Travers's researches on wounds of the intestines; Lawrence's writings on syphilitic ophthalmia and eye diseases generally; Guthrie on the treatment of the eyes, his observations on gun-shot wounds, on diseases of the urethra and neck of the bladder; B. Brodie's diseases of the joints and urinary apparatus; H. Mayo's remarks on disease of the rectum; Charles Bell's surgical works on great operations, on diseases of certain parts of the osseous system, and on the urinary apparatus; Arnott's diseases of the urethra, and Scott's compression in congestion of the joints.

In this judgment there seems to me to be some exaggeration, some mistake, and some praise. I must repeat here what was said in the second chapter on the comparative character of English and French surgery—that, viewed in reference to inflammation, the latter must be regarded as inferior to the former. In enumerating the distinguished surgical names at London, mention should be made of J. H. Green, Liston, Stanley, Tyrrell, Bransby Cooper, Earle, Wardrop, Langstaff, and Keate. In the writings of the surgeons named by Baumès, there are not only solid and long-established truths to be found, but, what he overlooks, new truths, and even fundamental principles of indisputable importance. Among these is the new nervous theory, developed by Charles Bell, the surgeon and physiologist. This is espoused by such surgeons as Shaw, Swan, Mayo, Earle, Macartney; and, among physicians, by Marshall Hall, Wilson Philip, Hugh Ley.

It would be hard to find out promising young surgeons, if we do not reckon among the number those who have already accomplished something; and the difficulty becomes the more evident when it is considered that in London a hospital, as an opportunity for display, is as necessary as war to a soldier. But if it be admitted that, according to general laws, talents and activity will never be wanting to second the spirit of the age, the former qualities can scarce be denied to English surgeons, when we see so much zeal for this branch of science actually manifested in their schools. To follow out deductions from correct fundamental principles is now the especial and praiseworthy occupation of English surgery. It

consolidates, compares, applies, and collects, not only in excellent monographs, but lately in equally excellent manuals and encyclopædias, whatever has been published of anatomical and surgical, of physiological and pathological observations and facts. This well sustained and systematic plan communicates to surgery in England a quietness, steadiness, and consistence, which have gained its professors great praise. If, on the contrary, we look at French surgery, its perfection consists more in partial improvements and single discoveries, which emulation and the eager pursuit of distinct objects have brought to light, and which do not appear united or developed in connection. Competition in English surgery has not assumed the direction of inventing new instruments and methods, to the neglect of others which are approved and cherished. On one side is haste, on the other moderation; one commands very great respect; the other, as may easily be perceived, much less.

In fine, our French traveller blames the internal treatment of surgical patients, because they receive stimulating nourishment, or because fever is excited by opening means and by calomel, in circumstances in which he at the same time saw evident irritation of the gastric organs, and a demand for antiphlogistic remedies. This objection concerns itself with peculiar medical views, and especially with Broussaism, of which enough has been already said.

English surgery, as it has been developed since the days of Gale, Clowes, Reid, Wiseman, and Woodall; by Cheselden, Sharp, Pott, Bromfield, Cline; then by J. Hunter, Everard Home, Abernethy, Blizard, and the living surgeons already mentioned, among whom Astley Cooper is still prominent as the model of an English surgeon—has progressed so securely as never to have made a misstep or retrograded, and to have always conveyed the impression of unity, as if formed in a single mould.

As it has been several times repeated already, English surgery derives its present character from John Hunter, and its basis is anatomy, which in general is less pursued and cultivated for itself, than in its application as surgical and chirurgico-pathological anatomy. To extend and improve this is a principal occupation of their surgeons—as their museums, hospitals, schools, and private collections, testify. By their connection with all parts of the world, comparative anatomy is facilitated. Human anatomy is attended with confessed difficulties; and for this very reason the rare opportunities afforded seem to be the more prized and availed of. The aid of copper-plates, of models, and of preparations in tartar, are all invoked by turns. It is in pursuit of this science that so many young surgeons go over to Paris, and that so many skeletons are carried from France to England. Meanwhile, the new anatomy bill has at once increased the facility of obtaining bodies, and rendered dissection more respectable. Since the discovery of the atrocious means employed to obtain bodies, and known under the name of Burking, and since the late parliamentary acts, the theatres no longer purchase bodies, but the parish surgeons deliver up all those which come into their possession (and this includes such

persons as die without relations and friends to claim them, and who in many instances have been expelled from civil society for crimes) to the anatomy inspector particularly appointed to receive them, by whom they are distributed to the different schools in order, according to the number of pupils. This office now belongs to Dr. Somerville. In consequence of these wholesome regulations, the subjects are both fresher and cheaper; since they cost only the transportation and the expenses of burial. This arrangement extends not only to London, but throughout England. Formerly, the number of bodies in London was from two to three hundred yearly, whereas the first year after the new act they amounted to six hundred, and out of London to one hundred bodies. In Ireland they are much more abundant. In regard to anatomy, fine injections, in which Macartney in Dublin possesses a well-earned reputation, are well conducted; but microscopic researches, which in Germany are becoming more general and are effecting still greater discoveries, are rather neglected.

Pathological anatomy is not only earnestly and carefully pursued, but in the most systematic manner. The account of the case almost always accompanies the preparation. In the museum, you at once remark the abundance of preparations of hernia, diseases of the urinary apparatus and of the joints, strictures, stone, aneurism, medullary fungus, and accidental variations of form. Most of them are very well injected. The pathological anatomy of the eye is very little cultivated, in spite of Wardrop's efforts. Such a museum is regarded as absolutely necessary, and is among the first objects in erecting a new school; it is, in general, very judiciously contrived, not only in the arrangement of the pieces, in which the plan of John Hunter is followed, and in the preparation of a catalogue, but likewise in an architectural view. The frames are placed in well lighted rooms near the walls, and little winding stairs in the corners lead to the second story, likewise divided, and to other galleries. They appear and are used like libraries. In some hospitals, especial painters and modellers are employed. In this way the true history of the hospital is preserved. Even here, however, we recognise the love of the English for curiosities; since here, as well as among their cases of disease, these are more highly prized than plain and merely instructive cases. The museum of the College of Surgeons, the greater part of which consists of the Hunterian collection, is the largest, and contains above twenty thousand specimens; but that in Guy's Hospital, of which Hodgkin is the keeper, that in the London University, in King's College, and likewise private museums, like Langstaff's, are all excellent. In St. George's Hospital is a cabinet, not of large size but of distinguished value; it contains only pathological preparations. The most remarkable are—diseases of the joints and of the urinary apparatus; purulent cavities in the medullary substance of the heads of the bones, some of which have been recognised, trepanned, and healed; the treatment of enlarged middle lobe of the prostate by perforation; among diseases of the bones, the falling in of the head of the femur

in old age, which resembles the healing of a fracture of the neck. It is, in fact, a great satisfaction to look around in this collection—and the more, as it is evidently a source of satisfaction to the English to exhibit these treasures of theirs. Some glasses are closed with small pieces of caoutchouc; but the usual mode is to fix upon the edges of the jar a flat ground glass or a hornblende, and a plate of lead with a double bladder. In order to estimate the merit of the English in surgical and pathological anatomy, one need only call to mind aneurisms, hernia, diseases of the bladder, accidental tissues, and, above all, medullary fungus.

Diseases of the urinary apparatus, which are the objects of particular attention, seem to be endemic, and connected with their peculiar mode of living. A stranger soon remarks the deep colour of the urine, and the yellow sediment adhering to the vessel. In the collections of calculi, it is easy to recognise the lithic acid stone, and at first sight to distinguish it from the heavier, harder, and rarer mulberry species, consisting of oxalic acid; as well as from the lightest, largest, and most frequent, formed of the phosphate of lime. The more slowly a stone forms, the harder in general it is; and hence one can, with some probability, draw a conclusion in regard to their chemical character. In the museums, most of them are sawn across so as to expose the concentric rings, and there is frequently seen a nucleus of hardened blood or mucus. They are marked with the history of the case, their weight, their composition, and the operator's name. According to a summary contained in the sixteenth volume of the *Medico-Chirurgical Transactions*, the geographical distribution of urinary calculi is as follows:—In Aberdeen (Royal Infirmary) there appeared, in ten years, sixty-eight—in thirteen boys, five women, and fifty men; in Bristol (Infirmary), in ten years, thirty-one cases; in Edinburgh and Leith, (Infirmary of military surgery,) forty-one; Liston, in Edinburgh, performed in ten years thirty-four operations; in Glasgow Infirmary, there were thirty in twelve years; in Hull Infirmary, two and a half to three annually; in Liverpool, ten operations in thirteen years; in Norwich Hospital, one hundred and twenty-two cases in eleven years; in St. Thomas's Hospital, London, seven and seven tenths annually; in the London Hospital, forty-one in ten years. In Dublin, on the contrary, Carmichael reckons only six operations to occur annually. Among the numerous causes alleged why the disease occurs in Ireland and in seaport towns so seldom, the use of unfermented liquors is the most probable. The latest work on calculus is by J. Gross, the celebrated surgeon in Norwich, where operations are the most frequent. In the Norfolk hospital there occurred, in sixty years, 704—of which 35 were performed on women; 611 were cured, 93 died, or one in $7\frac{5}{3}$. Another estimate gives the average of operations for stone, in London, at 47 yearly; in the rest of England and Wales, 64; together, 111. One case in five is said to terminate unfavourably, as is the case in Paris.

Lithotomy, so particularly improved in England, will now be considerably restricted by lithotrity. The latter method already

begins to extend itself. Heurteloup practises it exclusively, and is countenanced in so doing by Brodie; Castello also, Combe, and in Dublin Crampton, defend and practise it. It is intended, if the plan is not actually carried into effect, to found an especial hospital in London for twelve patients of this description.

The operative practice of English surgery is anatomically sure, quiet, and prudent. One day in the week is set apart for operations in the hospitals. Several of the hospital surgeons are commonly present together, and support one another by advice and assistance. In important cases, the practice adopted is the final result of deliberate consultations. The patients are introduced—at least this was the custom in St. George's Hospital—with a bandage over their eyes, and keep this till they are removed. The amphitheatre is filled with spectators; the light is introduced from above; the operation table is simply constructed; the instruments are of good steel, sharp, and not complicated. The operation usually proceeds in great quiet; rapidity of execution is very little, perhaps too little, regarded. New modes are less esteemed than those which are already approved, and have been practised throughout England. Bleeding vessels are tied with Bromfield's hook, and secured with the ligature, (I was not witness to the employment of torsion,) one end of which is left out of the wound.

In amputations the circular section is employed, but flap-amputation is resorted to in the leg when an artificial foot is to be worn. The bandage is intended to promote healing by the first intention, and all other dressings of linen or flannel are omitted. The fomentations are prepared with cold water, or brandy and water, but are not always used. Lint is little employed; the sticking-plaster is excellent, but the suture might be more frequently resorted to with advantage. As an example of the simplicity of their present mode of proceeding, I here cite Liston's practice. He frequently performs the flap-operation, making the first incision from without inwards, the second in the opposite direction. He uses a plaster prepared from isinglass, a strong solution of which in spirit, saturated at the temperature of boiling water, is spread on strips of oiled silk. In amputation the strips are laid between the sutures, and stick so fast that the threads can be safely removed at the end of twelve hours. The plaster does not irritate the skin. After amputation the wounded part remains quiet six hours before the above dressing is applied. The limb is then laid in a proper position, kept high and cool, and bathed with cool water. In healing by the second intention, the granulations are maintained, not by bread poultices, but by warm water, covered with the same oiled silk to prevent evaporation. As the ulcer heals, however, mild astringent or stimulating means are applied—as zinc, copper, or alum.

The finding and tying of vessels is, in consequence of the frequency of aneurisms, carried to great perfection; and there is abundance of practice in the treatment of accidents. About forty of these, on an average, enter the London hospital weekly. The non-union of fractures of the neck of the femur is acknowledged;

but in all fractures, however complicated, it is preferred to attempt union rather than resort to amputation.

The plastic operation deserves to be more extensively introduced from Germany. The merits of Graefe and Dieffenbach, however, in this respect, are acknowledged. Keate in London, and W. Ferguson in Edinburgh, have effected restorations of the nose.

Specific inflammation is, as hinted in the preceding chapter, not so fully recognised as in Germany. That the specific character of ulcers—German *helcology*, in short—is underrated, may be inferred from two late treatises on ulcers of the leg by W. Eccles in 1834, and J. Spender in 1835. Gout, syphilis, and scrofula, are regarded as the principal fundamental constitutional affections. Hence it happens that the medical treatment of surgical diseases does not appear altogether satisfactory. Besides this, the separation of medicine and surgery, at least in London and England generally, seems to be still too great. It is known that the London schools have an especially anatomico-chirurgical character, and this character also prevails in the London practice. In fact, the number of practitioners who at once pursue surgery, medicine, and even pharmacy, is very considerable; but these, mostly educated in the London hospitals, have in general a too empirical and too exclusively surgical bias, or rather an insufficient general and medical education. But, in truth, the high position which belongs to surgery it derives principally from its connection with medicine. In regard to Edinburgh surgery, very various judgments are formed in London, which the author has not been able to verify by a personal residence in that city. There is a spirit of rivalry which attempts to undervalue it, but this seems to be unjust. The Edinburgh surgeons must at least be better anatomists and physiologists, and have a more finished education. The distinction made between the two schools is, that in London the student gains a very perfect knowledge of anatomical structure, which knowledge is in general too little connected with physiology and (internal) pathology. In Edinburgh, on the contrary, anatomy is taught with especial reference to physiology and general practice. On account of this distinct point of view from which anatomy is regarded in the two schools, it is said to be very possible that a great part of the Edinburgh pupils would be rejected, on an examination in anatomy, at the London school of surgeons, and a still larger part of the London pupils would experience the same thing at Edinburgh. That the Edinburgh surgeons are better pathologists and scholars may be inferred from this, that the study of medicine and surgery is there pursued in connection, and likewise from the fact that the degree of doctor of medicine is not obtained till after four years of academical instruction, and that there is no degree of doctor in surgery.

Among the internal means employed in surgery, are bleeding, quicksilver, cathartics, and strengthening food. Sometimes, however, the medical part of the treatment, in the hospitals, is given to a physician, and then the physician and surgeon attend the patient

jointly. Some surgeons refuse to admit this participation. The hospital surgeons, indeed, who belong to the class of pure surgeons, as distinguished from the general practitioners, possess the requisite medical education to undertake internal treatment. In London, the proper English doctors of medicine, fellows of the College of Physicians, based upon the universities of Oxford and Cambridge, stand higher, both in classical and general education, than even the pure surgeons.

ENGLISH MILITARY SURGERY.

Every English regiment has a surgeon and an assistant surgeon. The former has the rank of a superior officer, and advances according to seniority, but never beyond the grade of the oldest captain. The latter has the rank of a subaltern officer, and advances to the grade of the oldest lieutenant. Both are partly doctors and partly examined surgeons, which depends upon the different management of the schools in England, Scotland, and Ireland. Their uniform is like that of the officers, but distinguished by a black plume on the hat. The assistant surgeons have, whether on duty abroad or at home, 7s. 6d. a day, about £132 yearly; in the cavalry, one shilling more for a horse. The full surgeons have, both in the infantry and cavalry, 11s. 4½d., about £220 yearly, and must keep a horse. Half pay for the time when one is not in active service, six shillings. Each full surgeon, after serving seven years as such, or ten years generally, obtains an increase of pay to 14s. 1d., the half pay remaining as before; after twenty years' service, he receives 18s. 10d., half pay as before; and when he becomes disabled by service, ten shillings; after thirty years, he receives fifteen shillings as half pay. The apothecaries receive ten shillings daily. A higher rank is that of deputy inspector of hospitals; they have 25s. and 12s. 6d. as half pay. Inspectors-general of hospitals have £2, and for half pay, £1 daily. The hospital mates receive 6s. 6d., in foreign countries, 7s. 6d.

The highest distinction belongs to the army medical board, of which Sir James M'Grigor is director-general. This board, however, does not form the medical establishment of the whole army. Its existing constitution, in fact, is due to the wars in the Peninsula, in which M'Grigor was peculiarly prominent, and gained great credit. The army medical board includes only the infantry and cavalry in England, Scotland, and the colonies—that is, about fifty thousand of the ninety thousand which constitute the whole army. The royal guard in London, the artillery and the numerous regiments stationed in Ireland, are independent of it. The military surgeons in Ireland report to their own director-general in Dublin, now Dr. G. Renny; the artillery, to Sir J. Webb; the guard, to the field-marshal of the army.

There are no especially military medical schools, as in Austria and Prussia. The dependence is placed on finding well educated medical men for military service by means of sufficient rewards

and honour. How great the number of aspirants is, may be inferred from the fact, that when the expedition against Spain, under Evans, was proposed in the year 1835, so many young physicians solicited the employment, that two companies might have been formed from them alone. There is a general hospital for the army at Chatham, six miles from London, under excellent regulation, with a good library, and a constantly increasing museum of anatomy and natural history. The cabinet of natural history is collected from all parts of the world, and the birds and reptiles are especially worthy of notice. Most of them are not set up, but lie in glass cases side by side, partly for want of room, partly because, for scientific purposes, this has been found sufficient, and a convenient mode of preserving them. The reports which the military surgeons render monthly, are commonly expressed in conformity with the nosology of Cullen. They are so full, that the report on an individual, taken together, might well be termed his pathological biography. Every new assistant surgeon is obliged, after his examination by the army medical board, and before his nomination, to go to Chatham, and there pass from four to ten weeks in learning the routine of medical duty.

When a regiment is distributed into several cantonments, the station of the principal surgeon is generally at the head-quarters of the corps; that of the assistant with the strongest detachment. The state of health of the whole regiment is enquired into weekly. The surgeons must regularly visit the hospital twice a day. The assistant keeps the sick-list, bandages, dispenses medicine, bleeds, &c. Every great operation must be reported before it is performed. Both surgeons have to provide their instruments, and keep them in order. The regiment furnishes the medicines. The upper surgeon directs the meat and bread for the sick. There are also waiters attached to the hospital, a hospital serjeant, a nurse, and an orderly man. The diet, which for the most part is alike for all English hospitals, is the following:—

1. *Full diet*.—For breakfast, one pint of gruel or rice; at noon, three quarters of a pound of meat, one pound of bread, half a pound of potatoes, one quart of table beer; at supper, one pint of oatmeal gruel, or rice broth.

2. *Half diet*.—Morning, one pint of oat gruel, or rice broth; noon, half a pound of meat, three quarters of a pound of bread, one pound of potatoes; evening, one pint of oat gruel, or rice broth.

3. *Small diet*.—Morning, tea; noon, quarter of a pound of meat, half a pound of bread, half a pound of potatoes; evening, one pint of oat gruel, or rice broth.

4. *Fever, or spoon diet*.—Morning, tea; noon, half a pound of bread, or sago, instead of a part of it; evening, tea.

One half shilling daily is the estimated expense of each patient. As respects the mortality among the troops, of fifty-three thousand, one hundred and fifty-three men who served in the colonies, there died, during a period of ten years, an average number of three thousand and thirty-seven yearly—that is, six times more than

died at home, and thirteen times more than in the French army, which for six years in France buried only 1.9 per cent. In estimating this difference, however, many allowances must be made.

The English military surgeons have greatly distinguished themselves by their learning, and by original works. Among their eminent authors of this class, are Hennen, Sam. Cooper, Guthrie, Hutchinson, Haunnick, Sir James M'Grigor, Sir W. Burnett, Vetch, Sir A. Halliday, Bacot, Marshall, Murray, Dease, Lindsay. They have likewise been zealous cultivators of natural history in foreign climates, and have studied the geographical distribution of disease. An especial course of lectures on military surgery is delivered in Edinburgh by Sir G. Ballingall, and clinical instruction united with them.

The medical service of the English fleet was formerly very bad ; the surgeons of the royal navy had no rank in the fleet, and what are now the assistant surgeons, were called, and were, in fact, doctor's mates. The condition of the latter still admits of improvement, both in regard to their pay, and their relation to the officers, with whom they do not associate or mess. The distinction of full and assistant surgeons is maintained in the navy. Those who apply for admission, must be neither under twenty nor above twenty-six, must have a sufficient knowledge of Latin, have been assistants to an apothecary, and have visited hospitals and attended lectures not less than two years, in London, Dublin, Edinburgh, or Glasgow, as is required of the surgeons in those places. A preference is also given to those who, by the knowledge of diseases of the eye, and of other branches, as legal medicine and natural history, have especially qualified themselves for the service. For the rest, the pay of the fleet surgeons is small, and their half pay for long services is estimated too low. In this respect, an improvement is expected, together with which the qualifications required for admission may also be increased.

In the merchant service, the surgeon receives, whatever the direction of the voyage, from £50 to £60 yearly.

OPHTHALMOLOGY.

Saunders, the actual founder of English ocular science, died in 1814, in the flower of his age. He founded an institution for this branch of surgery, and commenced the school in which Travers, Lawrence, Tyrrell, and Earle, have followed him. Wardrop and Guthrie are also to be mentioned as surgeons, who devote themselves particularly to the eye. Wall, Adams, Phipps, and the now celebrated operator, Alexander, were oculists, and distinguished as such. Among the institutions expressly devoted to ophthalmic cases, are the Royal Infirmary for the Diseases of the Eye, in Cork street, Burlington gardens, where Alexander is oculist, and Sir Henry Halford physician ; the London Ophthalmic Infirmary, in Moorfields, the founder of which was Saunders ; and the West-

minster Infirmary for the Diseases of the Eye. Tyrrell and Guthrie are attached respectively to the two last. There are also similar establishments connected with the large hospitals.

The English appear to have much still to learn in ophthalmology, both as respects the diffusion of a general knowledge of the subject among physicians and surgeons, the more accurate distinction of qualitative constitutional or specific inflammation, as referred to in the preceding chapter, and the improved methods of operating. Among their most useful remedies, are the red precipitate, the nitrate of silver, both in the form of ointment (thus Guthrie considers a combination of ten grains of the caustic with one dram of simple ointment, employed in connection with blood-letting and aperients, as a real panacea in chronic scrofulous corneitis and hypopium) and in a solution, prepared with one to two grains to an ounce of water, and even stronger, for it is observed that a part of the salt is decomposed by the mucus of the eye. This solution is applied with advantage in chronic conjunctivitis, and especially in blennorrhagies. Strychnine is given in amaurosis internally and endermically, in half-grain and grain doses; and belladonna in inflammations, especially of the iris.

Guthrie is a great friend of local stimulants, and Lawrence recommends taking blood in considerable quantity at once, the more as he regards chronic ophthalmia as the same with acute, allowing for the difference in duration and intensity. When the disease depends on constitutional causes, among which he especially recognises scrofula, gout, syphilis, and rheumatism, he puts the patient on spare diet, or strengthens the system by nourishment, good air, exercise, and gives as internal remedies blue pill, extract. colocynth., extract. rhei, &c.

Their operative methods might be improved, especially in operations about the eyelids, for ectropium, entropium, and distichiasis. The comparative advantages of extraction or depression of the cataract are variously estimated. I saw extraction performed on the right eye of a woman, while the patient lay upon her back. The operator stood behind the head, held the eyelid with his left hand, and with his right divided the cornea upwards with a knife resembling that of Richter. A needle opened the capsule, and by pressure with the finger, the hardened lens was forced out. The whole operation was done quietly and prudently. The eye was then loosely dressed. The instruments are mostly very well finished, the handles short, those of the needles round, or with eight edges. Jacob, in Dublin, in order to be secured against the breaking of the knives in operations, adopts a peculiar practice. He takes sewing needles and bends them; out of twelve, eleven commonly break; the twelfth is selected for a cataract needle, polished, and set in a cedar handle.

Weller's manual is translated into English. Walker's Principles of Ophthalmic Surgery is the latest English work. This author has adopted something from German science, and has appended a vocabulary of French and German synonymes. The

English, in general, acknowledge the merits of foreigners, but on this subject express their astonishment at the three hundred technical terms, which have been counted in German ophthalmology, and term them "the product of the laborious wit and dulness of the Germans." In short, as they themselves express it, they respect German talent wherever it appears, but imagine that our professors must be authors and nomenclaturists by profession, and say that there are no lucubrations enveloped in such thick mist as the German. They are partly right.

CHAPTER VII.

CHANGES IN THE CONDITION OF MEDICINE IN FRANCE.

Before the revolution of 1789, there were in France eighteen colleges with power to confer the degree of doctor, which was very easily obtained, and, in fact, an article of traffic. In Paris, the corporation of physicians had an inconsiderable building near the Hôtel-Dieu; and the corporation of surgeons, though of lower rank, possessed the beautiful edifice which is now the school of medicine. Afterward, in August, 1792, all universities and faculties were overturned, and anarchy reigned even in medicine. In the third year of the republic, 1794, the national convention founded three *écoles de santé* for the whole country—at Paris, Strasburg, and Montpellier. Medicine and surgery were now united, the school of medicine founded, twelve professors were appointed for Paris, and a definite plan of study was to be pursued by the *élèves de la patrie*, and the means furnished gratuitously. It was also determined that all prescriptions should be written in French, perhaps only a concession to the ignorance which prevailed of the Latin; but the regulation continues. It was only, however, the select number of *élèves de la patrie* who enjoyed the privilege of gratuitous instruction. New arrangements were made in 1803, by which the three *écoles de santé* received authority to create doctors of medicine and surgery, and the law was promulgated that four years of study should be required before obtaining this degree. A second class of medical personages was likewise created, the *officiers de santé*; these were not obliged to study at the three great schools already mentioned, but had permission to practise after being examined by a jury of medical persons. In 1820, new orders were issued in regard to the universities. In Paris, there are now twenty-five professors; a definite course of studies is still prescribed, and the *officiers de santé* are continued throughout France. Of the arrangements of the Paris school, we have already spoken in the first chapter.

The *officiers de santé* are not obliged to complete the course of

instruction required for the doctors; they must study three years at one of the universities, or at a secondary school, and may, instead of this, pass five years in a country hospital, or live six years with a practitioner. They also undergo three examinations at the university, with an outlay of 250 to 300 francs, or they are examined by a jury of medical persons. They can practise only within certain limits, and all great operations are interdicted. They can, however, be very little controlled.

Among the qualifications for a degree of doctor in medicine, are a thorough school education, a diploma from the *Faculté des Lettres*, as bachelor of letters, and one from the *Faculté des Sciences*, as bachelor of sciences. These resemble our own proofs of maturity. The next condition is to take inscriptions at a university of medicine for five years, and to receive five examinations. These are commonly made at the end of each year. The first is in natural history, pharmacy, physics, and medical chemistry; the second in anatomy and physiology; the third in medicine and surgical pathology; the fourth in hygiene, legal medicine, *materia medica*, and practice; the fifth in *clinique interne* and midwifery. These examinations are held openly in the school of medicine. The expense of all the inscriptions amounts to 1100 francs. A foreign physician must, in order to become a doctor, submit to the examinations, and pay the sums for the inscriptions. This done, he is permitted to practice all branches of the profession where he will. There is, therefore, no farther examination under public authority.

The apothecaries in France form a very learned body. No one can practise pharmacy, till after examination by them; no one can dispense who prescribes, and no one prescribe who dispenses. The school of pharmacy is greatly respected. There are also herborists, so called, who must likewise be examined.

As much fault is found with the existing regulation of medical affairs, attention is now turned to the subject of reform, especially in the matter of education. As early as 1829, the minister of the interior addressed a series of questions to the Academy of Medicine, respecting the reorganisation of the whole system. The academy appointed a committee, which did not report till October, 1833, after the disturbances of the revolution of July, and the agitation of the cholera, had passed, and after their attention had again been called to the subject by M. Guizot. The report was laid before the academy by M. Double. In order to meet the increased demand for instruction, the committee proposes to add to the three existing faculties of Paris, Strasburg, and Montpellier, three others, one in Lyons, one in Rennes or Nantes, and one in Toulouse or Bordeaux. To make the examination more strict, the examiners are not to be taken from the members of the faculty simply, but (somewhat as in our state examinations) one third shall be from among the medical personages of the town or the vicinity. The report was accepted by the academy, and sent to the minister. Among its other suggestions of improvement, are the suppression of the *officiers de santé*, the prohibition of the secret remedies of

quacks and of certain abuses in medical and pharmaceutical practice, and the acknowledgment of foreign degrees. Patents for nostrums shall be issued only after the approval of the same by the academy of medicine; the remedy must be new and useful; it must be offered for sale at the regular drug stores, and after the expiration of the patent, the composition must be published; the tax for such patent shall be 500 francs for five years, 1000 francs for ten years.—According to a calculation which assigns one physician to two square miles (French), France requires sixteen thousand. Admitting that practice is commenced at the age of twenty-four, the annual mortality, according to general laws, would be three hundred and sixty-two, and, in fact, the number of physicians admitted by the three faculties has been for several years about three hundred and ninety. In order to secure a uniform distribution of the number, notwithstanding the unwillingness of practitioners to resort to the poorer districts, it has been proposed, that, for the future, both physicians and apothecaries shall pay a certain sum for the right to practise, which shall be proportioned to the department and to the population of the community.

This subject of reform is frequently urged in the *Lancette Française*, and gives to this journal its peculiar political colouring. Its criticisms are mostly personal and tinctured with party spirit, and its tendency is Saint Simonian. Its views, complaints, and propositions of reform, are singularly unreasonable. It maintains that the school of medicine is useless, and ought to be abolished; that instruction ought to be gratuitous; that as the number of physicians and surgeons is too large, a limited number only should be admitted into the medical schools (as in the *Ecole Polytechnique*, about three hundred are admitted at the commencement of a cursus, after a concours, in which about one in three succeeds); that the examinations should devolve on persons chosen at the time by lot; that of the twenty-four teachers of the medical faculty at Paris, at least one half are too old, or too insignificant, or too negligent, &c.

This year, a commission has been appointed by the government, to make proposals respecting the reorganisation of the medical establishment, and among its members are Orfila, Andral, Pariset, Donné, &c.

CHAPTER VIII.

CONDITION OF MEDICINE IN ENGLAND, AND ITS REFORM.

Medical corporations—Sketch of the College of Physicians, College of Surgeons, Company of Apothecaries in London—Constitution and condition of these corporations and their members—Accoucheurs—Universities of Oxford and Cambridge, Scotland and Ireland—The reform question—Medical politics—London University and King's College—Prospect of reform.

In Great Britain and Ireland, the physicians, surgeons, and apothecaries, are united in three corporations, which, having

different rights, and being in part old, in part new institutions, do not combine to form a consistent whole. In England, there exist as scientific bodies, and at the same time as acknowledged authorities, three colleges in London, viz:—

The College of Physicians,
The College of Surgeons,
The Society of Apothecaries.

There exist also, as institutions of medical education, in England, the two universities of Oxford and Cambridge, and especially the various hospital schools and other private schools, in London and in the provinces.

In Ireland, there is at Dublin a college of physicians, a college of surgeons, and a society of apothecaries; there are also a university, special hospitals, and schools.

In Scotland, there are the four universities of Edinburgh, Glasgow, Aberdeen, and St. Andrews; in Edinburgh there are also private schools, a college of physicians and a college of surgeons, which last also includes the apothecaries.

Doctors of medicine are created at the above universities, and afterward, in order to become members of the college of physicians, take an examination at one of the aforesaid colleges. In England, no actual physician is at the same time a surgeon; but in Ireland and Scotland, a doctor of medicine may be a surgeon also. The apothecaries in England can at the same time pursue medical and surgical practice; in Scotland, surgical; in Ireland, neither of the two.

The College of Physicians in London was founded under Henry VIII., and therefore before England and Scotland were united. Its first president was Linacre, who, as well as many subsequent presidents, stood in near relation to the universities of Oxford and Cambridge. It possesses very extensive powers for the maintenance and extension of medical study and learning, and for the control of medical practitioners generally, in London and within seven miles of that city.

These privileges, however, have for some time increased this college only intensively, not extensively; in fact, in the latter view, its influence has rather lessened, or been left unemployed, and little use has been made of circumstances to extend its control over education and medical policy. Neither has it employed its powers in adapting such changes to its constitution by by-laws, as would have corresponded to the change of times. It has greatly limited the number of its members, and has divided them into fellows and licentiates, thereby creating distinctions which are constantly becoming less useful and less appropriate. In conformity with the ancient ecclesiastical distinctions which prohibited all except adherents to the established church to study at Oxford or Cambridge, it has excluded all catholics and dissenters from fellowship. Even now, every candidate for this honour must have received a doctorate of physic at these universities, and consequently have signed the thirty-nine articles; or he must have been a doctor at the Dublin

university, and afterward at least have inscribed himself at an English university. In fine, the College of Physicians of London, where surgery was already at so low an ebb, has excluded all surgeons from their association and regard; the same is the case with apothecaries and accoucheurs.

The College of Surgeons was established as a special corporation by act of parliament, in the year 1745. It was again dissolved, in consequence of some accidental irregularities in its proceedings, and the present College of Surgeons founded in the year 1800, by George III., for the promotion of surgery, for the examination of surgeons for the army and navy, and of other individuals who wish to become members. Its original constitution empowered it only to subject to the scrutiny of its court of examiners those who should voluntarily express a desire to become members. Its high character, however, and the consideration attached to membership, are such, that at present no surgeon, either in London or in England, would commence his course of practice, without submitting himself to the required examination. In the two first years of its organisation, three hundred members were admitted; in the last two, seven hundred. This college excludes medicine, as well as midwifery and pharmacy, from its course.

The apothecaries, who, unrestrained by any authority, exercise at once medicine, surgery, and obstetrics, were united in one corporation in the year 1815, very accidentally, on occasion of the then existing apothecaries' company—a mere trades' union—addressing a petition to the minister to obtain a reduction of the duties on glassware. It now combines privileges in itself to which the other two cannot pretend. The Apothecaries' Company or society assumes the examination of general practitioners in England—that is of those practitioners who combine with the trade in, and the preparation of, medicinal articles the practice of medicine, and likewise of surgery and midwifery. It assumes an oversight of all medical articles exposed for sale. It has a court of examiners, and its admitted members are called licentiates. As belonging in a manner to the class of trading people, they are looked down upon by the regular physicians and surgeons; but they have the advantage in point of number, and are cheaper to their employers, as they charge only for their medicines and not for their attendance.

There remain of the medical corps the mere dealers in drugs, the druggists and chemists. Then there are oculists, aurists, and dentists, all of whom practise on the freest terms, for they are without examination and without control.

The College of Physicians—the union of physicians properly so called—is very small in number. From 1772 to 1832, this college, according to one statement, has admitted only one hundred and sixty-nine fellows, and since 1823 only one hundred and seventeen licentiates. The total number of estimated members in London is about four hundred and sixty. There are also licentiates admitted beyond seven miles distance from London, who are called extra licentiates, but are few in number. These physicians demand

for their professional services, in proportion to the price in other countries, a very high fee. Advice given in their own houses costs the patient half a guinea or a guinea; a visit at the patient's house one to three guineas. Every mile beyond London is reckoned at a guinea.

Among the immediate regulations (by-laws) of the college are the following:

No one can be a candidate for a fellowship unless he has all the rights of an Englishman by birth, is twenty-six years of age, and has been doctor of physic in Oxford, Cambridge, or Dublin. The candidate must not have traded in any secret remedy, or have supported himself by practising the art of surgery, midwifery, or pharmacy; he must have been examined and approved in physiology, pathology, and therapeutics, and likewise in Hippocrates, Galen, and Aretæus. Again, any member who commits a misdemeanour, or who practises pharmacy, midwifery, or any manual labour, is expelled. No one can be a fellow, unless he has fulfilled the above conditions, and has been a candidate for one year. The admission is voted by secret ballot; the ceremony of admission is solemn, and accompanied with an oath; the new member pays £135.

Licentiates are those doctors of medicine who are examined by the board of the college, but have not studied at Oxford, Cambridge, or Dublin; having graduated at a Scottish university or abroad. They pay £24 on admission. They cannot be chosen officers of the college, and have no right to use the library or the other collections. The president, however, has permission to propose one of the licentiates every two years as a fellow. There are four censors and four curators, out of which number the president is chosen yearly. This highest medical honour is now possessed by Sir Henry Hallford, who has been president ten years without interruption. The registrar is Dr. Francis Hawkins. The yearly income, principally consisting of rents of houses which have been bequeathed to the college, amounts to about £4115 yearly. The college has a handsome building in Pall-Mall east, near Charing Cross: here are—a library, a collection of articles of the *materia medica*, and the assembly room. A large meeting is held four times a year, and essays listened to, which are read by the registrar; once a year the Harveian oration is delivered in Latin. These assemblies are numerous and even fashionable. Some of the ministers and members of both houses are usually present, for the physicians proper in London maintain a high rank in society. By their education at the universities with the noblemen of the country, they form associations, which they endeavour to retain both in their private relations and as members of the society. These meetings are held in the evening. The president sits before a green table; near him are placed the most distinguished guests; on his right stands the secretary; the hall does not contain nearly seats enough for those present, who appear in shoes; tea is served in an adjoining apartment, and after two hours the meeting is closed. The College of Physicians is likewise a scientific society,

and has published three volumes of transactions, a full edition of Harvey's works, and the *Pharmacopœia Londinensis*, the latest edition of which is some time since exhausted. Lectures are also delivered under its sanction. It is a recognised authority, and as such must take the responsibility of having gradually thrown the practice of medicine, for the most part, into the hands of the surgeons and apothecaries, and of having neglected the care of the public health. The college consists of members who individually stand high in scientific and general education, and who have never stained their character as gentlemen for the sake of money, which it would have been easy for them to obtain, but who have kept less in view the purposes of science than their external relation to the society, and have thought more of their rank than of their attainments as physicians. In short, the college of physicians has marred its good qualities by the fault of being too exclusive.

The whole number of physicians proper, or doctors of medicine in England, is reckoned at about six to seven hundred.

The College of Surgeons consists merely of members distributed in all England and Wales. Their peculiar province is surgery; but as the mere surgical practice is small, and as on account of the small number of actual physicians there is a demand for the latter, they also treat medical cases, and have generally an apothecary's shop, receiving in the latter case licenses from the association of apothecaries. This plan is not adopted, however, by those who are termed pure surgeons—who are the most respected, and the number of whom in London amounts to about one hundred—who alone are operative surgeons and teachers in the hospitals. The council consists of twenty-one members, all of whom live in London, who fill their own vacancies, and select for this purpose from the number of pure surgeons only men of "high moral feeling." They have especially the whole conducting of the college. The college building is a large edifice in Lincoln's-Inn Fields, which at this moment has been built out and enlarged. It contains the famous Hunterian museum presented to it by parliament, which is still increasing and well kept, but not wholly arranged or set up. A library has been collected within ten years, which is rich in the departments of medicine and surgery, and is open to all the members, and even to strangers. It contains nearly 20,000 volumes, and in its arrangements and appointments has taken that of the British museum as a pattern. In the museum, which is well known to contain a systematic course of preparations for the illustration of animal and likewise vegetable structures, both in healthy and morbid condition, there are of the wet preparations about 8087 pieces set up—perhaps three fourths of the whole—and of the 7697 dry perhaps a seventh part is set up; so that on the whole about one half is in a condition to be used. The conservator, Clift, is still employed in putting them in order, and preparing the catalogue and commentary, which we have already seen in part in German. It is open three times a week, from ten to eleven o'clock,—viz., Monday, Wednesday, and Friday—but to strangers every

day. Every year thirty lectures are delivered, in as many hours, by two teachers appointed by the council, to which the members have the right to be admitted, and the older students of the hospitals obtain permission. From time to time there appears a volume of Transactions of the Royal College of Surgeons in London. The income arises principally from the fees for the examination certificates, and hence is uncertain. It amounts annually to about £11,000, and the expenditure to £8,000, of which £2,000 is for the museum alone, £900 for the library; their capital amounts to £70,000. The number of members of the college in all England and Wales is about seven thousand eight hundred, of whom about two hundred are pure surgeons; the rest belong also to the apothecaries' association, have an apothecary's shop, and are called surgeon apothecaries.

The council of twenty-one members has a president, now T. Andrews, and two vice presidents, Sir Astley Cooper and Sir Anthony Carlisle. From these there are chosen ten examiners, which dignity generally devolves on the oldest in succession. In London there are reckoned two thousand members; the members of the council must reside in London. The rules of the examinations are stated above. (s. chap. i.) Between 1823 and 1833, there were four thousand six hundred and twenty-one candidates examined, of whom three hundred and sixteen were rejected. The price of the examination is £22; most of them, say nine in ten, are examined but once. The ceremony commences at 6 p. m., and continues usually till midnight. The ten examiners receive together five guineas for each candidate examined; this, divided, brings to each examiner for each evening about six guineas; and this is repeated about fifty times a year. As the examiners are almost all teachers at the hospitals, their respective pupils are not examined by them; each examiner can put questions at all times.

The surgeons have in this manner, besides elevating their art, raised themselves in their external relations. Sir Everard Home was the first surgeon who received the honour of knighthood. All write more or less medical prescriptions, and the medical practice of a surgeon is reckoned at about nine tenths of his whole professional occupation.

The Apothecaries' Company unites the practising apothecaries. It possesses the large building called Apothecaries' Hall, near Blackfriars' bridge. It was originally a trades' union, but is now a scientific association, and as such publishes transactions, and has a botanic garden; it is also a recognised body, with the regulation, care, and oversight of examinations. As a commercial union, it purchases and prepares medical articles on a large scale, and sends great quantities of calomel, for example, to the colonies. Their chemical preparations are furnished to the druggists for retailing; so that the latter superintend only the mixing.

The number of general practitioners in England and Wales is reckoned at ten thousand (this estimate includes the greater part of the surgeons also). Admitting, then, that an average medical

career is twenty-five years, it follows that four hundred additional members are required yearly; and about this number are actually examined at Apothecaries' Hall. In order to become a licentiate of the society, the fee required is six guineas; and from those who intend residing in London, ten guineas. As the physicians are so few in number, and their services so dear, the general practitioners become the medical attendants of the poor, the middling classes, and even of the richest in ordinary cases. The apothecaries are not permitted to write prescriptions. After a visit they send the medicines to the patient, and, with a few recent exceptions, the latter pays only for the articles ordered, and not for the services of the attendant. Hence they have been charged with sending too much medicine, and in fact in every case of disease a new packet is furnished after the visit of the day. If they are likewise surgeons, however, they can prescribe. In the critical periods of disease they sometimes call in a regular physician, but this is seldom resorted to in the country. Sometimes the general practitioner is at once physician, surgeon, midwife, apothecary, and tradesman. Pharmacy has perhaps generally been their weakest side; it stands, in fact, lower than in France or Germany. Their chemical labours are mostly anticipated at Apothecaries' Hall, so that little more remains for them than the compounding. The mechanical character of these processes, carried on in Apothecaries' Hall, forms of itself a broad line of distinction between the condition of apothecaries and that of physicians. The former cannot be chosen hospital physicians or surgeons. Should a young man, at sixteen years or upwards, have entered as assistant in an apothecary's shop, and during or after the next five years have attended the three required winter courses and two summer courses; and should he, after this, fail in an examination, he troubles himself no farther about the apothecaries' company, as it is free for him to be druggist or chemist, and thus to sell and to practise in entire independence. Druggists and chemists are in great number over all England. Sometimes these shops are inspected by the apothecaries' company in connection with two members of the college of physicians; but, as the articles are purchased from Apothecaries' Hall, the former are in fact examining their own wares. The apothecaries in England, therefore, have gradually assumed more of the medical character, and laid aside their own; they have ceased, in fact, to be apothecaries, without becoming physicians.

From the Transactions of the Royal Medico-Chirurgical Society, acknowledged perhaps as the best collection of treatises in English medical literature, may be inferred the relative position of the three grades which have been referred to. They contain, up to the year 1832, in a series of seventeen volumes, 183 remarkable cases, and 192 memoirs, whose authors may be thus distributed according to their rank:—fellows of the college of physicians, 14; licentiates of the same, 100; surgeons, 120; army and fleet surgeons, 38; general practitioners, 67; surgeons out of London, 23.

There are some doctors of medicine who practice midwifery

exclusively, and these are held in high estimation. There is also an obstetric society in London, the object of which is to excite the medical corporations to take more cognisance of this branch of medicine. This, however, has hitherto not been effected. Midwifery is still regarded as a feminine occupation, and its cultivators are in derision termed men-midwives. There are no institutions for the instruction of females in this branch.

The two English universities of Oxford and Cambridge have for their principal objects of study the classics, mathematics, natural history, divinity, and physic. They require a term of study of eight years in Oxford, in Cambridge of ten years; of which, however, only three and a half years need be passed at the institution; and the expense amounts yearly to from £300 to £400. The course of medical study might be effective, for the facilities for the purpose are present or may be easily obtained. The number of medical students, however, is very small, on account of the restraints imposed, amounting only to a little more than twenty at each. The professors are frequently absent; the candidates have certain insignificant examinations to undergo: first to become bachelors of arts, then bachelors of physic, and then doctors. The examinations are acknowledged to be mere formalities; at the graduation frequently no one is present except the doctor and the beadle, and even the theses are not prepared by the future bachelor or doctor, but by the beadle aforesaid. Of these graduations there are about three yearly. Dr. Kidd, regius professor of physic in Oxford, said himself before the parliamentary committee, that for the obtaining of the honours there was actually no medical education needed. The general education of the candidates is not despicable, partly because they have pursued classical studies at the schools, partly because they continue these at the universities, and here at least are made to estimate the importance of science, and gain an elevated idea of moral worth and of the value of medical study and rank. Their medical knowledge, however, is gained in London, Edinburgh, Dublin, or Paris—every where, in fact, except at Oxford or Cambridge.

It is evident that the system of medical instruction in England is at this moment, in many respects, imperfect. The instruction given at the universities to physicians has become almost insignificant, and that furnished in the hospitals to the numerous surgeons and general practitioners is not sufficiently extended. Political and legal medicine are nearly prostrate; the latter has been taught in London only within twenty years, and in medico-legal cases neither the labour nor the judgment of a surgeon is duly appreciated. The number of physicians is too limited, and hence they are constantly more and more encroached upon by the general practitioners, who in general are not altogether respectable practitioners of medicine. The separation of medicine from surgery is for the most part too abrupt; the accoucheurs ought to be promoted in rank; the druggists and chemists to receive more respect; the quacks to be put down. By the external distinctions maintained, the spirit of

medicine is weakened and dissipated; the free development of medical effort is discouraged, and the welfare of the public neglected. These circumstances, therefore, require to be changed, and the desire for reform is universal. Petitions for this purpose have been directed to parliament, and among them one from the most respectable physicians of London, mostly licentiates of the college of physicians. In consequence, a committee of the former body was appointed in 1833, and still remains organised. They are styled a select committee on medical education and practice. Their president is Mr. Warburton, who first introduced the subject, and who is the father of the anatomy act which produced such general satisfaction. Warburton is a radical, but it is unnecessary to remind him that this is no anatomy bill; that the corporations are not yet dead bodies; and that, if they were, the object is not to dissect, but to revive them. In this committee there are members of the colleges of physicians and of surgeons, and other eminent men, and their published views and opinions fill several folio volumes, which were not lost, as was feared, at the late burning of parliament house. The problem of reform, however, is a very difficult one; for it is connected with the great questions of reform in England generally, with the division between the whigs and the tories, and in part with the questions upon the English church and the dissenters. But whatever may be thought of conservatism and reform, it is to be wished that the change in the system of medical affairs may be regarded as necessary in itself. Even when unanimity shall be obtained on this point; when it is acknowledged that the corporations have survived their usefulness, that abuses have crept in, that wisdom has become folly and kindness an injury; still there will be various opinions on the point, how far change is admissible, and what measures ought to be adopted to effect it.

The question of reform is the principal theme of three weekly medical journals, which have a distinct character as political publications, and, like the latter, have their "leading articles." The radical journal among these is the *Lancet*, its opponent is the conservative *London Medical Gazette*, and between the two stands the *London Medical and Surgical Journal*. The first is published by Messrs. Wakley, the second by Dr. M^cLeod, the last by Dr. Ryan. The *Lancet* has been particularly prominent and conspicuous in connection with the question of reform, and likewise by the publication of the lectures of eminent teachers, who endeavoured to prevent this proceeding, but in vain, until at last an act of parliament declared such publication to be an infringement of property, and forbade it. The *Lancet* makes a business of exposing the defects of the medical establishment; of bringing to light abuses, irregularities, and faults; and, as it also introduces personalities and the private affairs of individuals, it has rendered itself by these means a very popular journal, and Mr. Wakley has gained no inconsiderable credit. He satisfies himself, however, with discovering defects and finding faults, and few suggestions of positive improve-

ment are to be found in his pages. Last year he was chosen member of parliament by a part of London, to the astonishment of many of his countrymen.

The Medical Gazette is a conservative journal; its publisher is a licentiate of the college of physicians, physician to St. George's Hospital, and known by his activity as a writer. In this journal, to say nothing of the valuable scientific contents, it is easy to recognise the elevated tone of the college of physicians. Its language is not in opposition to reform; a change of laws and institutions is acknowledged to be necessary to meet the changes of the time; but with this some regard is paid to replacing what is removed. The college of physicians has also itself made some changes lately in its own laws. The London Medical and Surgical Journal has its medical portion, calculated, like that of the *Lancet* and the *Medical Gazette*, for the use of students. All these contain very good essays, cases, and announcements of the latest discoveries in medicine, especially, among those abroad, of French medicine and surgery. The political character of the last named journal, as already observed, is neutral. Its views of reform comprise the adoption of some of the French regulations—of the concours, for example—in conferring appointments; but the *Medical Gazette* goes farther, compares and estimates the medical constitutions of more distant countries, and proposes to adopt improvements from Germany, Austria, and Prussia.

To supply the acknowledged want of a university in London, two institutions have lately been started, having distinct political and ecclesiastical characters; both having pretensions to the rank of a university, and both deserving notice in this connection for the great importance of their medical regulations.

The whig party first determined, in the double view of advancing science and of opposing the conservatives, to establish a university in London. For this end they turned to account the zeal for speculation, at that time prevailing; and, in order to encourage the approaches of dissenters, who are excluded from the two English universities, no professor of divinity was appointed. Its foundation dates from February, 1826. By issuing shares of £100 each, the holders of which are styled proprietors of the university of London, a capital was formed, and a very handsome edifice erected at the northern part of the city. A council of twenty-four proprietors takes the lead, and assembles monthly. A complete description of the plan may be found in Horn's travels. It still remains a private company, has not the power of conferring medical degrees, and does not meet all the expectations which might justly be formed of it as a university. From its admitting dissenters, apprehension has been excited among the more spiritual, that the principles of the English church would not be maintained there; and consequently it is only in those branches of science which have least concern with ecclesiastical questions—as medicine, for example—that the university begins to enjoy a certain degree of prosperity.

The medical school has at present the following teachers and courses.

LECTURES.	PROFESSORS.	DAYS AND HOURS	FEES.		
Medicine	Dr. Elliotson	daily at 8	£5	0s. and	£8
Mat. Med.	Dr. A. Thompson	5 times at 3	6	0	9
Midwifery	Dr. D. Davis	3 times at 9	5	0	7
Chemistry	Dr. Turner	daily at 10	7	0	10
Legal Medicine	Dr. A. Thompson	twice at 4½	3	0	
Anat. and Physiology	Dr. Quain and Mr. R. Q.	5 times at 2	12	0	18
Surgery	Samuel Cooper	3 times at 7	4	10	6
Botany	Dr. Lindley	3 times at 9	3	0	6
Patholog. Anatomy	Dr. Carswell	3 times at 10	3	0	
Comp. Anatomy	Dr. Grant	4 times at 3	3	0	
Veterinary Surgery	Dr. Youatt.		5	0	7

A pathological museum, already well filled, contains a collection of preparations and demonstrations by Charles Bell, who was formerly teacher at the institution, but afterward left it, and is now replaced by Carswell. A hospital, called the North London, or London University Hospital, is situated opposite the university; it is a simple building, containing at present one hundred beds, which number is soon to be increased to two hundred, and has been open since 1835. The wards, the theatre, &c., are very well adapted for use. The physicians are Drs. Elliotson, A. Thompson, Carswell; the surgeons, Cooper, Liston, and Robert Quain; the latter has lately retired. Clinical lectures are given. The principal object is to rival successfully the other hospitals and schools. For this purpose the places of house pupils and of dressers are disposed of by concours, the lectures are somewhat cheaper, and the fee for attendance on the hospitals amounts to little more than half the usual sum demanded at other institutions. With all this, however, the odium of a money speculation still remains; a share of 100%, which is now still less, gives a right of property, and with it an influence in the management of the university; the institution, notwithstanding the reputation of particular teachers, has never been able to attain the highest character; and its political and religious position condemns it in the eyes of many. In view of these circumstances the conservatives and church party have likewise founded a university under the name of King's College. King's College, in like manner with the last, embraces the sciences, and has likewise displayed an especial regard to medicine. The council express their belief "that many who intend their sons for the medical profession will willingly seize an opportunity to connect themselves with an institution, which has for its leading object to educate the rising generation in the doctrines of Christianity as taught by the established church, and to implant in their minds the true principles of morality. It is expected that all who belong to the class of students of medicine of King's College will regularly attend divine service in the chapel of the college on Sunday morning."

Their new building is large and handsome, and stands on the Strand, next the east wing of Somerset House, near Waterloo Bridge. The entrance is imposing; a flight of stone steps leads to the corridor, which passes through the whole building, and is three hundred feet in length. In the middle of the corridor is the entrance to the chapel; on the two sides are ranges of apartments, on the west lie the library and the anatomical museum. The former is still small, the latter already contains four thousand pieces, mostly pathological preparations. Among them are diseases of the bones, of the joints, of the digestive apparatus, of the lungs, and of the blood-vessels, in great abundance. There are also morbid preparations of the generative and urinary organs, and the wax models are perhaps the best in London. The germ of this museum was Herbert Mayo's collection. The general lecture room is light and well fitted for hearing; the anatomical theatre and the dissecting room are in a separate building directly upon the Thames. The morning lectures are from eight to twelve o'clock; about ten o'clock short prayers are read in the chapel. Between twelve and half past one there are no lectures, in order to leave time to visit the hospitals. The last evening lecture is at eight o'clock. The price of a complete medical course is 50*l*. The students have permission to wear the academic dress, cap and cloak. They still want a special hospital, although one of the professors is attached to St. Thomas's and three to the Middlesex Hospital. Many of the students attend St. George's, Westminster, or St. Bartholomew's. It was expected to have united the new hospital at Charing Cross with the college; but this was not effected. The courses commence commonly the 1st October and terminate with the end of April. They are divided in two parts, the second commencing on the 21st of January. The students are either regular, and as such attend the courses throughout, or they attend some of them only, and are termed occasional students. The school was opened in 1833. The lectures and teachers are as follows:—

LECTURES.	PROFESSORS.	DAYS AND HOURS.	FEES.			
Medicine	Dr. F. Hawkins	3 times at 9	£3	3s. and	£6	6s.
Mat. Medica	} Dr. B. Hawkins { } Dr. Gregory {	3 times at 11	3	3	6	6
Midw'y and Diseas. { of Women and Ch. }		3 times at 11	3	3	6	6
Chemistry	J. Daniel	3 times at 3	4	4	10	10
Legal Medicine	Dr. Watson	twice at 3	3	3	4	4
Anat., Physiology, { and Path. Anatom. }	H. Mayo and Partridge	daily at 10½ and 2	8	8	18	18
Surgery	T. H. Green	3 times at 8 P. M.	4	4	6	6
Botany	G. Burnett.	6 times at 8	4	4	6	6

A short time since, however, several of these teachers retired in consequence of some disturbances, and their places are still to be supplied.

Both universities have since been trying to obtain a royal charter. Their medical faculties are hitherto well contented if they can equal the schools of the hospitals, and have teachers sufficient in number and abilities; but the subjects of study are far too limited, if they wish to be considered as universities.

These two institutions may now be considered in reference to the question of reform. It is thought that, if a metropolitan university shall have been founded, they will come to be university colleges, and that similar colleges will be founded for the provinces also. A general examining committee, to which the three corporations are to contribute, is to confer degrees. Oxford and Cambridge, these old "great seats of learning," can, by improving their medical instruction, still maintain the pre-eminence due to their ancient fame. All must now be anxious to learn the conclusion of the parliamentary committee, and all are prepared to be astonished at the sagacity and wisdom, with which the British parliament will avoid infringing established rights while granting desired privileges. The report and plan of the committee are not expected to be forthcoming the present session (1836), but the next year a decision of parliament is anticipated on this subject of medical reform.

It may also be added, that at Easter of the present year some important changes in the laws of the College of Physicians, made by themselves, have gone into operation. At present every new applicant is first made a licentiate, and having remained such four years, can then be proposed and elected a fellow. But the conditions of becoming successively licentiate and fellow are the following. The candidate must adduce evidence of having studied, for five years, anatomy, the theory and practice of medicine, chemistry, materia medica, natural history, especially botany, midwifery, legal medicine, and the principles of surgery; he must also have attended the practice in a hospital of at least an hundred beds; and persons who have previously studied abroad, must spend one year at least in attending an English Hospital. Whoever wishes to become a fellow at the regular period, must be regularly proposed by the new established council or committee, consisting of twelve members, and must likewise have been graduated at an English university.

CHAPTER IX.

A GLANCE AT GERMANY.

Theory in German medicine—Influence of philosophy upon this and upon systems—
Natural philosophy.

When one from beyond the Rhine and from beyond the North Sea looks back upon Germany, he recognises at once a prominent peculiarity in this country. He perceives the great number of theories, and of misty theories, which are there found heaped up together. And as the contemplation of each object from a distance thus assists in forming a correct idea of it, the fact becomes more evident, in thus regarding them, that a cloud still hangs over Germany, the principal masses of which are indeed rolling away, but the smaller portions, still lingering, seem unwilling to follow. This cloud is our philosophical age, which indeed has given life to German medicine, but which, it must be confessed, though beneficial in its tendency, has not exerted this happy influence directly. I may perhaps be permitted, in the present chapter, to contemplate somewhat more closely the general character of German medicine, as it has shown itself for the last fifty years, then to point out how the predominance of theory has impeded its actual progress, to notice the change which has taken place in this respect, and at the same time to show plainly the influence which this predominance still exerts, in a special manner, on the branch of pathology.

As at the end of the last century our literature and science assumed a higher stand, first through the poets, afterward through the critics and philosophers, so every science took its character from these three classes. And as the most elevated and profoundest thoughts were elicited by philosophers in metaphysical researches, the feelings of the Germans were especially interested in these, and all sciences became, to a great extent, speculative. The sensible retreated before the spiritual. Even medicine felt the influence. The earlier writers and practitioners, as Stoll, P. Frank, A. G. Richter, Selle, S. G. Von Vogel, &c., had followed the path of experience, and some remained faithful to their example, even during this period of revolution. But in general, during this period, this course was contemned, and regarded as appropriate only to ordinary and weak minds.

At this favourable moment a theory came from Scotland, the well-known, and once with us fully domesticated, theory of Brown. Seldom has a doctrine been received with greater eagerness than this was seized upon in Germany. It seemed at once simple and logically exact. The interest it excited amounted to enthusiasm. Afterward, when this system had been attacked, both theoretically and on practical grounds, it fell very rapidly in general estimation. But the speculative direction was already given to the public mind, and the path, once entered, was not easily abandoned. Other

medical theories arose in succession, among which the theory of stimulus, so called, and many other dynamic views, gained especial popularity.

Meanwhile, philosophy, besides the direction given it by Kant and Fichte, assumed another form, which adapted itself easily to medicine and to natural science in general, and which appeared under the title of Schelling's Philosophy of Nature. If German medicine had been before carried away by its overweening attachment to speculation, it pursued this new path with even greater eagerness. Here was not only abstract philosophy, but an elevating comprehension of all nature, with no small admixture of poetry. A union of medicine, philosophy, and poetry, succeeded. Schelling, the founder of the philosophy of nature, stood in close connection with the romantic school, so called, of our beautiful literature, to which some of our best poets belonged, as Tieck, the two Schlegels, and Novalis. He and the school exerted an influence on each other. While this union was extending itself to various sciences, a large part of its action was exerted on medicine. Such is the evidence of history, and traces of this union may yet be perceived. Medicine, previously spiritualised, was now inspired. Apollo was doubly its divinity, both as the god of healing and as the patron of the muses. A little terrestrial matter, a little that was positive and certain out of this science of experience sufficed, and therewith the pinions of thought mounted into the ideal. One sang in physiology, another warbled in pathology. They felt the soul of the world opened to them. What was beautiful and spiritual passed also for true; the distinction vanished, the resemblance prevailed. Metaphors and figures were explanations. The eye was light, the ear sound, the brain thought. This beautiful time has passed by. Here and there are still heard some faint echoes of it, but even the most zealous adherents of these views only express them at intervals. Our own age has become prosaic. Those poetical licenses which were formerly allowed are now less admissible. It is now acknowledged that all this was a mere frenzy which had possession of the public intellect. Yet this medical romance, if regarded without reference to its application, is not without merit as poetry. It deserves a place among our classic writings, and its language, which is confessedly unintelligible to the mass, is still worth studying, if only to understand and feel its truly poetical beauty.

But if Brownism, the theory of stimulus, the philosophy of nature, and their various modifications, have had their day, something still remains of the spirit of that age which may in general be termed the ideal. The evidence, as well as the cause of its disappearance, is that it is understood. "Every age," says a late writer, "is like a sphynx; when its riddle is solved, it throws itself down headlong." At present, while we acknowledge the favourable effects which are just beginning to show themselves, we can point out several direct and indirect evils which these false views, and this striving after the ideal, have done to science. These will

be made evident by enumerating the defects which in general appear to belong to that period, and the latter may be arranged under three heads.

First, and above all, discrimination was neglected. The Germans are comprehensive, and can embrace a large part or the whole of science in one view; they love to make comparisons and find analogies, and by these very analogies they have been misled. In the comparison of several objects, there are two points to be regarded—the resemblance and the diversity. The resemblances are to be summed up, and the differences to be deducted. But at this period analogies were so eagerly sought, that even when they were extremely feeble, the effort was still made to find points of resemblance, so as to make out the general similitude. The object was synthesis rather than analysis, to assimilate more than to distinguish, to generalise than to specify. The aid of imagination was called in to perplex and mislead the judgment. Men indulged themselves, not only in comparisons, but in figurative expressions, not seeking to explain individual views, but to illustrate obscure relations. The Germans at this period were not so much philosophers as philosophical poets; and far more interested in the pursuit of intellectual beauties than of scientific truth.

Secondly, there appeared a certain contempt of material objects, or what might be termed objective forgetfulness. Speculation, which the pride of philosophers adopts as the surest path to knowledge, is in medicine to be applied with a good admixture of pure sensualism. The greatest part of our science must be found in the domain of the real, which can be recognised by the senses. The solidity and depth which have been justly ascribed to German genius, were then the solidity and depth of theory. So much did men live in the world of ideas, that the word spiritual (*geistreich*) conveyed the highest praise, and an idea was prized only for itself, and not for its truth or susceptibility of application. Structures were erected in this ideal world with a security which can now hardly be conceived; and it will become still more wonderful, how such colossal theories could be reared up on such slender facts. Physiology, chemistry, and physics, were drawn upon for facts, which, though regarded as still unproved by the cultivators of these sciences, were applied with entire confidence to others. At this time, therefore, little that was useful could be obtained from German treatises, in medical literature—little that was trustworthy, or really important.

In the third place, a nomenclature was adopted, partly in imitation of the different philosophies, and partly framed to suit the new theories of individuals. That it increased the difficulty of comprehending objects by denoting subjective ideas, was no objection. Names, in themselves derived from sources foreign to the science, were rendered more obscure by the various senses which individuals had attached to them. The custom also arose of substituting for the ancient appellations, others which were new and of difficult formation. It is especially because this fault is gradually in course

of amendment, that the French and English find themselves at length able to understand the German writers, and on this ground they may, perhaps, be excused for having hitherto remained so ignorant of their productions.

During this period, which will be yet looked upon as especially the ideal, we suffered indirect injury from the fact, that much time was lost for the enlargement of the boundaries of medicine, which meanwhile was distinctly effected in France and England. It need only be recollected how, in those countries, the doctrine of inflammation, cow-pock, pathological anatomy, itself so wide a field, cutaneous disease, auscultation and percussion, lithotrity, many new remedies, &c., became objects of discovery and of improvement. We participated fully in the advantages of these; but, engaged as we were in other directions, few original discoveries were made in Germany. We boast, indeed, of having first discovered percussion, and thought of lithotrity. If justly, it is the more to be lamented that the value of these discoveries was not better understood.

Of the various branches of medicine, surgery, ophthalmology, and midwifery, which, from their nature, are the most free, were also the most developed. Ophthalmology presents in its improvement a very remarkable phenomenon; and surgery, favoured as it was by war, elevated itself both in external rank, and internal value. It was especially pathology which suffered the greatest injury at this time, and was most impeded in its progress. It has been already observed, that this period of our medical history is now ended. The philosophical systems, from which science in general, and especially medicine, received its peculiar character, have at present lost much of their control. Medicine is now free, and advances by itself in the road of experiment, independent even of that material direction which philosophy itself, in the system of Herbart, has lately taken. Medicine now seeks to approximate more closely to the pure natural sciences. It seems probable, indeed, that, disgusted with theory, it will throw itself with increased zeal into the world of material objects. Such a change, to those acquainted with the history of medicine, will seem perfectly natural. Already a strong zeal is felt to participate in the new efforts in physiology, anatomy, and pathology. On one hand, experimental results are demanded, and conclusions based upon facts; on the other, material objects are examined with microscopic and micrometric nicety. It now remains to show, by certain examples, how much of the ideal still continues in pathology, with its defects and its disadvantages. Two examples will serve to show this; the first of which is chosen because it is new; the second, because it has acquired considerable importance.

"Comparative Ideal Pathology" is the title of a work by Charles R. Hoffmann, which appeared in 1836. Its peculiar object is to discover the normal vital phenomena, pertaining to disease, in other grades of organic life, and it directs its researches to the inferior animals, comparing the condition of man in various

diseases with that of these animals in health. The following are examples. Rheumatism is considered analogous to insects; for the essence of rheumatism consists in this, that in it the fibrous membrane, which in its normal state has the office of an insulator, withdraws itself from the control of the external skin, and, in place of this, enters into correspondence with the planetary world. Now, among animals, insects possess a fibrous envelope in place of the epidermoid. Again, in scrofula the subject is striving to develop himself in the manner of insects, by metamorphosis, for the scrofulous subject is a human larva. In rickets, the effort is to change into an invertebrate animal—into a molluscus. Dropsy consists in the degradation of the man to the rank of hydatids, &c. Thus the ideal pathology discovers a prototype of every disease in animals, and the descent of man to one of the grades below him, when affected with disease. Resemblances of diseases to plants and minerals, equally striking, may be discovered in the same manner. The author proposes, in fact, to put forth a fauna nosologica.

One system of pathology, and its teacher, are now engaging, in no small degree, the attention of the Germans. The teacher is Professor J. L. Schönlein, formerly of Würzburg, now at Zürich, and so much of his system has become known, as an unlawful and unacknowledged publication of his lectures can give, and as his converts and pupils have in various ways communicated. This system, however, has had so many and so respectable followers, that the school is neither deficient in the number, nor the name of its members. It is, indeed, not so much a doctrine as a system, and, as it calls itself, a natural system. Its advantages require no farther illustration here, and have been fully explained elsewhere. Its scientific description of diseases in place of definitions, its attention to external phenomena, especially of chemical and physical character, and in relation to pathological anatomy, and the extensive nature of the whole scheme, cannot here be dwelt upon; and as little can any judgment be offered in regard to its peculiar features. What seems to adhere to it of the already mentioned general defects of a period now elapsed, may here be pointed out. Any prejudice against this school is little to be feared; on the contrary, the disposition generally felt to favour this mode of treating pathology, is calculated to inspire a caution, lest we be carried too far by the influence of the opposite bias.

The system or school of Schönlein has little of mere speculation. It resembles the philosophy of nature so far only as that it aims to treat medicine as a natural science. Between the two, however, the distinction holds, that the philosophy of nature contemplated man in his connection with the series of organised beings, his life as part of the life of nature; and that it regarded disease as a deviation from the normal life; in short, that it saw in disease a condition. The Schönlein school sees in disease no deviation from normal life, but regards it as a peculiar life. In their view disease is, as it were, an organism by itself. Farther, the philo-

sophy of nature endeavoured to make its explanation of disease a sequel to its explanation of the general economy of nature. The Schönlein school directs its attention at once to disease itself, and seeks not to explain, but simply to describe it. It offers no definition, but, as is done in regard to organisms, gives only the description. It has its poetry, however, as well as its rival. The faithful observation and examination of a body suffering under disease, and after the disease has proved fatal; the collecting of symptoms, phenomena, and results, seem to it necessary, but still too dry or too grave in themselves. It makes, therefore, a poetical comparison; it changes disease from a condition of the body into an organism—into a plant, for example—and then observes and investigates it. Now, as this resemblance is maintained and carried out, the system thus formed is less a natural than a botanic system. In fact, diseases are divided into families and species; there are among them, *phanerogama* and *cryptogama*. We are told of relationships, of the life of disease, of its physiology, its natural history, its seeds, its geographical distribution, its imperfect forms, &c., as in botany.

It must be allowed that plants and diseases admit of a very lively comparison, and that this comparison may be carried on to a considerable extent. The greatest resemblance to plants is to be found in the accidental tissues or parasites, then in the exanthemata, and in the process of inflammation. But when such a comparison, which must always be regarded as a poetical figure, is employed as a guide in the contemplation and distribution of the whole circle of diseases, it cannot fail to happen that it will often lead to error. Here, again, appears a disregard of distinctions; and although the appearances presented are professedly kept in view, there may be a forgetfulness of facts, or an unfairness in the employment of obscure phenomena or unascertained facts, in order to build up a system. On the other hand, the language and mode of representing the subjects are attractive, although the nomenclature is harsh. But the extravagances into which one is led by this botanico-natural treating of disease, appear not only in the false premises assumed by contemplating the disease as a plant, but also in the immediate or remote consequences and conclusions. It is common in medical language to use the word *germ* in a figurative sense. But here we find the term so employed, as to imply that measles are actually the germ of catarrh, and scarlatina of erysipelas. Among cutaneous diseases, the *impetigines* are botanically classified according to their anatomical forms. Those in which the form is imperfectly developed, are called *crypto-impetigines*. The elevations of the skin in other forms, are called *impetiginous fruits*, and in them is distinguished the *pericarp* from the fruit properly so called. The form of *herpes* is thus described: "a common pericarp, the fruit arranged in groups, and mostly vesicular." The groups of *psora* are characterised as a separate fruit stalk, with fruit standing singly. It scarce need be mentioned that the analogy is far more correct, when the exanthem is not compared with the plant

itself, but with the exanthema of plants, which has lately been made familiar to us by Unger. As plants themselves have diseases, this analogy has been applied to human pathology, and we are told of the diseases of diseases, &c. Farther, as the plant has a soil on which it grows, the human body is regarded as the soil of disease. All diseases, therefore, are considered as local. As this point is very disputable in itself, it is still more open to dispute when attempted to be sustained on the ground of such a theory. This, however, need not be so much insisted on in this connection, as the important difference, especially important in its relation to therapeutics, the very object of medicine, viz. that the soil is worthless without the plant; but, in the other case, the body represents the whole value, the disease being worthless, and even a nuisance. This, too, is a distinction which completely separates the calling of the physician from the pursuit of the botanist or the naturalist. In fine, another resemblance may be set up in opposition to the above; one, unless I mistake, not alluded to by Van Helmont, that, namely, of the alimentary canal to the roots of the plant. This analogy is at once drawn from nature, poetical and just.

The Schönlein school also treat of nosology too much in conformity with their leading botanical theory. Their adherents and followers endeavour in this way to improve the science, by tracing new families and relationships, new groups and species, among diseases; and thus still botanising, they seem to be in a fair way to complete, as it were, a flora nosologica. We cannot refrain from again expressing a wish that, by their regard for pathological anatomy—by their regard for all the natural sciences, by which their attention must be especially directed to the electric affinities and to the chemical relations of the secreted fluids—their accuracy in the investigation and application of facts, perhaps with the aid of the numerical method, may be increased, and their pursuit of hypotheses and analogies gradually cease.

Above all, pathologists should once more be reminded zealously to seek after distinctions. The method in which Wichmann, in his "ideas of diagnosis," compared diseases and weighed resemblances and differences, found too few followers at the time, and may well be recommended anew. It were to be wished that medicine, which already recognises the path of experience, and that clear method of investigation by which the natural sciences obtain their great results, as peculiarly adapted to itself, may come to be one of the (so called) exact sciences. Unhappily, we must admit that its character does not justify such a hope. It still plants its foot upon sensible experience, only to rise into speculation. To extend and strengthen this basis seems to be the problem for our next age. In the business of speculation, we can easily perceive, we have already practised ourselves sufficiently. The path which surgery, ophthalmology, and midwifery now follow, and which physiology and anatomy have entered, is, thus far, least frequented by pathology. In this branch we still perceive an obstinate attachment to dogmatism, a confidence in subjective knowledge, which

contrasts more and more remarkably with the progress of other branches of medicine, and of its auxiliary sciences. A spirited adoption of the true method of enquiry seems in fact to form, in regard to rational pathology, the business of the coming age.

CHAPTER X.

SOME FARTHER COMPARISONS.

The Germans unquestionably take the lead in the following branches: the management of schools and universities, political medicine, legal medicine, midwifery, ophthalmology.

There are above thirty medical journals in Germany, in France above twenty, in England less than twenty.

John Hunter may be compared with Shakspeare. Both were self-taught—both represented nature in her true guise, on their respective theatres, and both are the subjects of endless commentaries.

The knowledge of the scientific condition of other countries is much less in France and England than in Germany. In this respect the French exhibit a harmless ignorance, but the English often a prejudiced and injurious indifference. In both countries it is the rising generation which makes the principal effort to obtain some knowledge of foreign medicine.

In France, English medicine is at least better understood than German; in England, French better than German; in Germany, French and English medicine are understood about equally well.

In England, German medicine is somewhat better understood than in France. The English are fast taking more interest in the medical science of other countries. They have a certain dim respect for the Germans, principally because they are not willing to judge of that which is not sufficiently known to them. They find their language hard—their mode of writing and their theories still harder.

In England, hospitals and their wards first served as sources of instruction, and theoretical lectures were added afterwards. In Germany, theoretical lectures at the universities were first instituted, and practical instruction by means of hospitals followed.

A Frenchman and an Englishman, it is said, were once discussing a medical question. When the former had explained his proposition at some length, he enquired whether the latter admitted it. The other replied that he had, from the commencement, considered all this as already established.

The character of physician is most respected in England, and especially in London, if the title be limited to the members of the College of Physicians. For whatever is valuable in itself becomes augmented in value by becoming rare. On the other hand, the

general practitioners, although they have so considerably raised themselves in general estimation, stand lower in this respect than the German and French practitioners. Medical worth is like medical weights—it stands nearly on a par in all countries.

It is found that distinguished theorists may be good practitioners, notwithstanding their character as theorists. As examples of this may be cited Boerhaave, Cullen, Fr. Hoffmann, and the philosophers of nature. We remark in these cases a wide chasm between their theory and their practice. Theorists also may be good practitioners, because they are theorists. It is generally the adherents and pupils who make the connection awkwardly prominent, and thus destroy by union what can only stand separately. This explains how the dogmatic Germans may at the same time be the best practical physicians.

One who wished to detect and expose general faults might say, the French physician thinks more of the disease than the patient; the English, more of some other case in his experience than that before him; while the Germans hold the correct doctrine which Hufeland thus expresses—"generalise the disease and individualise the patient." The French generalise the patient, the English individualise the disease.

Much is said at present of a universal literature, and of melting down the differences in the medical practice of different countries. Nations are indeed advancing toward each other, but climates meanwhile remain unaltered.

THE END.

INDEX.

	PAGE		PAGE
Abernethy, his maxims,	63	Diet, English hospital,	100
Accoucheurs in England,	112	“ French hospital,	50
Amputation in England,	97	Dispensaries, London,	25
Amussat and torsion,	85	Double, his report,	104
Anatomy bill, English,	94	Dupuytren museum,	50
Andral,	48		
Apothecaries' company,	110	Ecole pratique,	18
“ “ examinations,	29	Edinburgh school, statutes of,	30
Armstrong,	65	Elliotson, his remedies,	65
Army medical board, English,	99	Empiricism in England,	74
Auscultation and percussion,	41	Examinations, French medical,	104
Autoplasty,	80		
		Fauna nosologica,	122
Bandaging in France,	79	Foreigners in Paris,	22
Baumes and his opinions,	92	French medicine, changes in,	103
Bell, his discoveries,	35		
Bichat, his labours,	40	Gall and Spurzheim,	55
Bleeding in England,	64	General practitioners in England,	111
Blennorrhœa and blennorrhagia,	55	Gensoul, his nasal catheter,	87
Botanic system of medicine,	123	German medicine,	118
Bovilland on rheumatism,	70	“ “ ideal period of,	121
Brighton,	73	Good, Mason, his treatise,	60
Broussais,	37	Graham, James,	75
Brownism in Germany,	118	Graves, Robert, his practice,	60
Burking in England,	94	Guthrie, his practice,	102
		Guy's hospital,	24
Calculus, frequency of, in England,	96		
Cambridge, medical examinations at,	112	Hamilton, James,	63
Cautehouc beds,	65	Hay fever,	70
Cataract needles, Jacobs',	102	Heart, rheumatism of,	67
Catarrhus œstivus,	70	Helcology, German,	98
Catheterisme forcé,	81	Heurteloup and lithotrixy,	83
Chatham military hospital,	100	Hoffmann's ideal pathology,	121
Cheltenham,	71	Homœopathy in England,	76
Chevalier Taylor,	75	Hôpital de l'Ecole,	20
Chloruret of soda,	47	Hospitals in Paris,	18
Chomel and typhoid fever,	45	“ London,	23
Civiale and lithotrixy,	82	Hunterian museum,	109
Clamart,	18	Hunter, John, his labours,	31
Climate, English,	27, 66		
Clinical lectures in London,	26	Ideal period in Germany,	121
Clinics in Paris, how conducted,	20	Impeliginous fruits,	123
College of physicians,	106	Inflammation,	31
“ “ rules of,	108	“ two doctrines of,	32
“ “ surgeons,	109	“ writers on,	33
“ “ examinations by,	110	“ specific,	89
Concluding comparisons,	125	Iodine, use of,	65
Concours, account of the,	21	Irish medical schools,	106
Creosote,	65		
Cryptogamous diseases,	123	Jacobs' cataract needles,	102

INDEX.

	PAGE		PAGE
Joubert's new doctrine, . . .	56	Quackery in England, . . .	74
King's college, . . .	115	Quartier, Latin in Paris, . . .	17
Lancet, the, its views of reform, . .	113	Reform in France, . . .	104
Larney, . . .	79	" in England, . . .	113
Lcamington, . . .	73	Rheumatism of the heart, . . .	67
Leeches, . . .	40	Rhinoplasty in England, . . .	98
Lisfranc, . . .	80	Ricord and his experiments, . . .	51
Lithotrity, its progress, . . .	82	Roux, . . .	79
" in England, . . .	97	" his practice in cataract, . . .	86
London, topography of, . . .	23	Saunders, . . .	101
Long, St. John, . . .	75	Schelling, his philosophy, . . .	119
Louis, his opinions on blood-letting, .	35	Schönlcin and his system, . . .	122
" his numerical method, . . .	44	School of medicine, French, . . .	18
" " " its defects, . . .	45	Schools in London, . . .	25
" on pericarditis, . . .	69	Scottish medical schools, . . .	106
Marshall Hall, his experiments, . .	35	Sca-sickness, . . .	77
Mayor of Lausanne, . . .	79	Speculum vaginae, . . .	53
Medical Gazette, London, . . .	114	Sphynx, . . .	119
" and Surgical Journal, . . .	114	Stethoscope, use of, . . .	41
Medical societies in Paris, . . .	21	Stevens, his researches, . . .	65
" " in London, . . .	27	Stomatitis, mercurial, . . .	54
Military surgery, English, . . .	99	Therapeutics, French, . . .	50
Morrison and his pills, . . .	75	" English, . . .	59
Mummy, opening of a, . . .	75	Thompson, A., his observations, . .	53
Museums, English, . . .	95	Travellers, medical, . . .	23
Naval medical service, English, . .	101	Typhoid fever, . . .	45
Nomenclature, German, . . .	120	Ulcers, classification of, . . .	90
Operations in England, . . .	97	University of Edinburgh, . . .	29
Ophthalmology, French, . . .	85	" of London, . . .	114
" English, . . .	101	Velpeau, his labours, . . .	84
Orthophreny, . . .	51	" his ophthalmic practice, . .	88
Oxford, . . .	77	Vénériens, hospital, . . .	52
" medical examinations at, . .	112	Voisin and orthophreny, . . .	58
Paris, its topography, . . .	17	Wakley and the Lancet, . . .	113
Parisian students, . . .	21	Wallace, his enquiries, . . .	55
Parry, Caleb Hillier, . . .	64	Warburton and reform, . . .	113
Percussion, . . .	41	Watering places, . . .	71
Pharmacy in France, . . .	104	Wichmann and his diagnosis, . .	124
Phrenology, . . .	55	Wilson, Philip, on mercury, . . .	61
Piorry, his pleximeter, . . .	43		
Purging method, English, . . .	63		

